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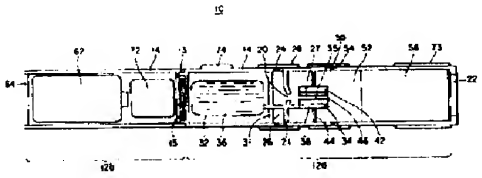
[54]发明名称 香味生成物品

[57]摘要

本发明提供的香味生成物品（10）具有壳体（12），该壳体（12）由可装卸地连接着第1和第2部分（12a、12b）构成。在壳体的第1部分（12a）内，形成从空气取入口（24）到抽吸口（22）的气体流路（26）。含有香味物质的液体状原料（36）的原料容器（32）内藏于第1部分（12a）内。原料容器（32）的排出口（35）配置在气体流路（26）内，与其相对地配置着陶瓷加热器（42）。液体状原料（36）从排出口（35）供给到陶瓷加热器（42）上被加热，在气体流路（26）内被气化。控制电路（72）和电源（62）内藏于壳体第2部分（12b）内。



权 利 要 求 书

1．一种香味生成物品，其特征在于，它具有壳体、原料容器、排出驱动机构、气化机构和电源；

壳体具有将空气取入内部用的空气取入口和使用者抽吸香味用的抽吸口，在取入口与抽吸口之间形成气体流路；

原料容器内贮藏至少含有香味物质的液体状原料，并具有前述原料的排出口，该原料容器安装在前述壳体内；

排出驱动机构通过上述排出口将前述原料从前述原料容器作为液滴排出；

气化机构配设在上述气体流路内，接受从前述原料容器排出的前述原料的液滴，并用电将其加热，使其气化；

电源向上述气化机构供给电能。

2．如权利要求1所述的香味生成物品，其特征在于，它还具有传感器和控制机构；该传感器用于检测使用者的抽吸动作；该控制机构根据来自前述传感器的信号，控制前述排出驱动机构，使前述原料从前述原料容器中排出。

3．如权利要求2所述的香味生成物品，其特征在于，上述传感器具有在抽吸口周围、配设在前述壳体上的压力传感器。

4．如权利要求2或3所述的香味生成物品，其特征在于，上述控制机构根据来自前述传感器的信号来控制前述气化机构，使前述气化机构发热。

5．如权利要求4所述的香味生成物品，其特征在于，上述控制机构在前述原料排出之前，先预热前述气化机构地控制气化机构和排出驱动机构。

6．如权利要求1所述的香味生成物品，其特征在于，上述电源配设在前述壳体内。

7．如权利要求6所述的香味生成物品，其特征在于，上述壳体由通过电线电性的连接的第1和第2部分构成，上述气体流路、原料

容器、排出驱动机构和气化机构配设在前述第 1 部分内，前述电源配设在前述第 2 部分内。

8．如权利要求 7 所述的香味生成物品，其特征在于，上述壳体的前述第 1 及第 2 部分通过连接部可装卸。

9．如权利要求 1 所述的香味生成物品，其特征在于，它还具有手动地前述操作排出驱动机构的操作杆。

１０．如权利要求 1 至 9 中任一项所述的香味生成物品，其特征在于，上述气化机构具有多孔质层，前述原料的前述液滴供给到该多孔质层上。

１１．如权利要求 1 至１０中任一项所述的香味生成物品，其特征在于，上述气化机构与前述排出口相对地配置，在前述气体流路内配设着节流孔，该节流孔把从空气取入口取入的空气导向前述排出口与前述气化机构之间的间隙。

１２．如权利要求 1 至１１中任一项所述的香味生成物品，其特征在于，为了将外气导入前述气化机构与前述抽吸口之间的前述气体流路内，在壳体上形成外气导入孔。

１３．如权利要求 1 至１２中任一项所述的香味生成物品，其特征在于，它还具有至少含有香味物质的固体状原料成形体，该固体状原料成形体位于前述气化机构与前述抽吸口之间地配设在前述气体流路内。

１４．如权利要求１３所述的香味生成物品，其特征在于，它还具有用于加热上述成形体的加热机构。

说　　明　　书

香味生成物品

本发明涉及抽吸香味或享受类似抽烟乐趣用的香味生成物品，更具体地说，涉及一种不通过燃烧、而是用电加热器加热液体状原料来生成作为抽吸对象物即香味的香味生成物品。

现有技术中，已提出了各种不燃烧香烟而能享受类香烟的香味和烟气的摸拟抽烟物品。

在日本专利公报特开平３－２３２４８１号中，提出了摸拟抽烟物品的典型的概念。该公报揭示的物品，例如使用杆状固体原料，用加热元件加热该固体状原料，生成香味等的抽吸对象物。此类物品的问题是，固体状原料被持续加热时，原料的浪费多，而当使用者等待着吸入地加热固体原料时，在使用者的吸入（喷第１口烟）开始与香味生成之间产生较大的时间偏差。

为了解决上述问题，在特开平３－２７７２６５号中揭示了一种具有被分割成多个部分的固体状原料的香味送出物品。该公报揭示的物品中，固体状原料的各部分通过使用者的每一次喷烟而依次被加热，生成香味等的抽吸对象物。该物品的问题是，固体状原料和加热元件构成一体的香味产生媒体。因此，在原料消耗后，要将加热元件与原料一起更换或丢弃，这对环境上、经济上都不利。

特开平５－２１２１００号揭示了一种用于检测使用者的喷烟的机构。该公报揭示的物品中，是根据从使用者嘴唇的动作得到的信号来控制驱动加热香味原料的加热元件。

美国专利４９４５９３１号中，揭示了一种使用加压烟雾容器的摸拟抽烟物品。该公报揭示的物品中，通过借助使用者的吸入动作使薄板摆动来使容器的出口机械地开放，放出烟雾。另外，该公报中作为变更例，揭示了一种在容器出口配设着加热元件的物品，该加热元件对被气化热冷却了的烟雾加热。该公报所揭示物品的问题是，由于借助于以使用者的吸入动作程度开闭的阀，将加压状态的烟雾关闭在

容器内，一旦阀打开时，则烟雾大量地泄漏。即，该公报的物品中，不能持续地放出适合于一口吸烟份量的一定量的烟雾，有可能在2、3次吸入动作后就全部放出加压的烟雾。

本发明是鉴于上述问题而做出的，其目的在于提供一种不会造成香味原料的浪费、并且能使使用者的一口吸烟与香味生成时间吻合的香味生成物品。

本发明的第1技术方案，其特征在于，香味生成物品中，包括有壳体、原料容器、排出驱动机构、气化机构和电源；

上述壳体具有将空气取入内部用的空气取入口和使用者抽吸香味用的抽吸口，在取入口与抽吸口之间形成气体流路；

上述原料容器内贮藏至少含有香味物质的液体状原料，并具有原料的排出口，该原料容器安装在壳体内；

上述排出驱动机构用于通过上述排出口将前述原料作为液滴从原料容器排出；

上述气化机构配设在上述气体流路内，它接受从前述原料容器排出的前述原料的前述液滴，并用电将其加热，并使其气化；

上述电源向上述气化机构供给电能。

本发明的第2技术方案，其特征在于，在第1技术方案的香味生成物品中，还备有传感器和控制机构；该传感器用于检测使用者的抽吸动作；该控制机构根据来自前述传感器的信号，控制前述排出驱动机构，使前述原料从前述原料容器中排出。

本发明的第3技术方案，其特征在于，在第2技术方案的香味生成物品中，上述传感器设有在抽吸口周围、配设在前述壳体上的压力传感器。

本发明的第4技术方案，其特征在于，在第2或第3技术方案的香味生成物品中，上述控制机构根据来自前述传感器的信号，控制气化机构，以使气化机构发热。

本发明的第5技术方案，其特征在于，在第4技术方案的香味生成物品中，上述控制机构在前述原料排出之前，先预热前述气化机构地控制前述气化机构和前述排出驱动机构。

本发明的第 6 技术方案，其特征在于，在第 1 技术方案的香味生成物品中，上述电源配设在壳体内。

本发明的第 7 技术方案，其特征在于，在第 6 技术方案的香味生成物品中，上述壳体由通过电线连接的第 1 和第 2 部分构成，上述气体流路、前述原料容器、上述排出驱动机构和上述气化机构配设在上述第 1 部分内，前述电源配设在前述第 2 部分内。

本发明的第 8 技术方案，其特征在于，在第 7 技术方案的香味生成物品中，上述壳体的上述第 1 及第 2 部分通过连接部可装卸。

本发明的第 9 技术方案，其特征在于，在第 1 技术方案的香味生成物品中，还备有手动地操作前述排出驱动机构的操作杆。

本发明的第 1 0 技术方案，其特征在于，在第 1 至 9 中任一项技术方案的香味生成物品中，上述气化机构备有多孔质层，前述原料的液滴供给到该多孔质层上。

本发明的第 1 1 技术方案，其特征在于，在第 1 至 1 0 中任一项技术方案的香味生成物品中，上述气化机构与前述排出口相对地配置，在前述气体流路内配设着节流孔，该节流孔把从前述空气取入口取入的空气导向前述排出口与前述气化机构之间的间隙。

本发明的第 1 2 技术方案，其特征在于，在第 1 至 1 1 中任一项技术方案的香味生成物品中，为了将外气在前述气化机构与前述抽吸口之间导入前述气体流路内，在前述壳体上形成外气导入孔。

本发明的第 1 3 技术方案，其特征在于，在第 1 至 1 2 中任一项技术方案的香味生成物品中，还备有至少含有香味物质的固体状原料成形体，该固体状原料成形体位于前述气化机构与前述抽吸口之间地配设在气体流体内。

本发明的第 1 4 技术方案，其特征在于，在第 1 3 技术方案的香味生成物品中，还备有用于加热上述成形体的加热机构。

根据本发明的香味生成物品，不浪费香味原料，而且使用者的一口吸烟与香味生成时间吻合。尤其是，通过根据来自检测使用者抽吸动作的传感器的信号控制排出驱动机构，不仅不浪费原料，而且总能提供稳定的香味。另外，由于能把将壳体可装卸地分离成为内藏电源

的部分和用口叼着的部分，所以，能更容易使用该香味生成物品。

图 1 是表示本发明实施例香味生成物品的概略图。

图 2 是表示图 1 所示香味生成物品的排出头的平面图。

图 3 是沿图 2 中Ⅲ－Ⅲ线剖切的排出头及排出驱动部的放大概略图。

图 4 是表示图 1 所示香味生成物品的控制系统的图。

图 5 是表示图 1 所示香味生成物品的一个使用状态的图。

图 6 是表示图 1 所示香味生成物品的陶瓷加热器的通电及排出驱动部的动作的动作定时例的图。

图 7 是表示图 1 所示香味生成物品的陶瓷加热器的通电及排出驱动部的动作的另一动作定时例的图。

图 8 是表示本发明另一实施例香味生成物品的概略图。

图 9 是表示本发明另一实施例香味生成物品的概略图。

图 1 0 是表示本发明另一实施例香味生成物品的概略图。

图 1 1 是表示本发明另一实施例香味生成物品的概略图。

图 1 2 是表示本发明另一实施例香味生成物品的概略图。

图 1 3 是表示本发明另一实施例香味生成物品的概略图。

图 1 4 是表示本发明另一实施例香味生成物品的概略图。

图 1 5 是表示本发明另一实施例香味生成物品的概略图。

图 1 6 是表示本发明另一实施例香味生成物品的概略图。

[本发明的最佳实施例]

下面，参照附图说明本发明的实施例。

图 1 是表示本发明一实施例香味生成物品的概略图。

香味生成物品 1 0 具有圆筒形壳体 1 2，该壳体 1 2 的外径为使用者能叼在咀里的大小。壳体 1 2 由被叼在使用者口中的第 1 部分 1 2 a 和内藏电源等的第 2 部分 1 2 b 构成。该 2 个部分 1 2 a、1 2 b 通过形成在壳本体 1 4 上的连接部 1 3 可装卸地连接着。2 个部分 1 2 a、1 2 b 通过电线 1 5 电气连接，该电线 1 5 收容在与连接部 1 3 对应地形成在壳本体 1 4 内的空间内。连接部 1 3 可采用螺丝头或嵌接等公知构造。壳体 1 2 的本体 1 4 用塑料、金属、陶瓷、木材等材

料做成。

在壳体１２的第１部分１２ａ的端部，形成供使用者抽吸香味用的抽吸口２２。在第１部分１２ａ的中间部，形成将空气取入壳体１２内部的若干空气取入口２４。在空气取入口２４与抽吸口２２之间，在壳体１２内形成气体流路２６。空气取入口２４具有与预定空气取入量对应的开口面积。另外，如图所示，在空气取入口２４的周围，在壳体１２上也可配设具有若干开口的调节环２８。这时，通过相对于空气取入口２４调节该调节环２８的位置，可以调节进入壳体１２内的空气流入量。

在壳体１２上配设着中心具有节流孔２０的节流板２１，该节流板２１位于气体流路２６内。节流孔２０的作用是使从空气取入口２４进入的空气沿着后述陶瓷加热器４２的表面流动。

壳体的第１部分１２ａ的里侧的、从气体流路２６被壁３１分隔的空间内，可装卸地固定着原料容器３２，该原料容器３２内贮藏着生成使用者所抽吸香味等的液体状原料３６。原料容器３２贮藏着的液体状原料36的量与使用者的若干次喷烟份量对应。另外，原料容器３２可安装在壳本体１４的外侧。这时，可将原料容器３２的头部插入壳本体１４中，也可以只将后述的排出口35插入壳本体１４中。

液体状原料３６至少含有香味物质。例如，在作为只用来吸入薄荷、咖啡等香味的物品时，液体状原料３６可以是只产生香味的原料。但是，液体状原料３６也可以含有加热时生成烟雾的物质以便在生成香味的同时还生成烟。生成烟雾的物质，可以采用乙醇类、糖类、水或它们的２种以上的混合物。这里所说的乙醇类，例如有甘油、丙二醇、它们的混合物。

即，液体状原料３６根据其用途可含有从各种天然物中提取的物质和／或它们的组成成分。例如，将本物品作为类似香烟的物品时，液体状原料３６中可含有香烟提取物成分或香烟凝缩物成分等的香烟成分。

原料容器３２设有排出头３４，该排出头３４有若干个用于在横断壳体１２的方向排出液体状原料３６的排出口３５。排出头３４比

节流孔２０更靠近抽吸口２２侧。为了通过排出口３５从原料容器３２排出液体状原料３６，与排出口３５相邻地配设着排出驱动部３８。排出头３４和排出驱动部３８由利用了压电元件的液体排出机构（与日本特公昭５３－４５６９８和美国专利第３５９６２７５号揭示的方式原理相同）构成。

例如，如图２所示，排出口３５其在排出头３４的上面的宽度W约２ mm、长度L约５ mm的范围内每列１０个地共配置了２０个。排出口３５的配列中心与后述的陶瓷加热器４２的中心大致一致。

图３是表示沿图２中的Ⅲ－Ⅲ线剖切的排出头３４和排出驱动部３８的放大概略图。即，图３是表示与一列排出口３５的列对应的断面，与另一列排出口３５对应的断面，与图３所示断面是左右对称的位置关系。

如图所示，在配线基板１３２上，为了形成供液体状原料３６流动的凹部或孔，叠置了由若干零件构成的框架１３４。由该框架１３４形成的凹部除了若干个排出口３５外都被薄膜１３６覆盖。为了暂时滞留液体状原料３６，在排出口３５的下面形成液体滞留部１４６。液体滞留部１４６的底板由具有振动板功能的电极１３８构成。

从原料容器３２出来的液体状原料３６先通过窄的流路１４２送出，从直径小于排出口３５的若干个吸入孔１４４到达液体滞留部１４６。在控制电路７２的控制下，电极１３８被振动操作时，液体状原料３６从流动阻抗小的排出口３５中有选择地被排出。排出了的液体状原料３６作为液滴ＬＤ供给到陶瓷加热器４２上。

关于液体状原料３６的排出机构，可以采用日本特公昭６１－５９９１１等揭示的由利用加热处理液产生的气泡推出的方式、美国专利第３０６０４２９号等揭示的使处理液的粒子带电来电场控制的方式等、公知的打印墨水喷出机构等。另外，也可以采用将液体状原料３６作为加压液体、通过开闭配设在排出口３５的阀进行控制的排出机构。

与排出口３５相对地在气体流路２６内配设陶瓷加热器４２。陶瓷加热器４２由支承构件４４固定在壳本体１４的内面上。排出头３

4的排出口35与陶瓷加热器42之间的间隙27可以通过从节流孔20出来的空气。因此，从空气取入口24进入的空气被节流孔20导向排出口35与陶瓷加热器42之间的间隙27内。

由排出驱动部38驱动而从排出口35放出的相当于一口喷烟的原料，作为液体飞沫或液滴供给到陶瓷加热器42上。陶瓷加热器42由陶瓷板和涂敷在其上的电阻发热体构成，因此，接受原料飞沫用的接盘和加热该接盘用的加热机构做成为一体。但是，也可以将接盘和加热机构作为单体分别配置。

陶瓷加热器42的接受原料液体飞沫侧的面、即具有接盘功能侧的面上，配设着0.01 mm～20 mm厚度的吸液性多孔质层46，例如，厚度约0.5 mm的活性碳层。多孔质层46不仅保护陶瓷加热器42的表面，而且能保持原料飞沫并且缓和陶瓷加热器42的热传递，从而起着使得原料飞沫的气化稳定化的作用。多孔质46可以由天然纤维素、纤维素衍生物、芳族聚酰胺树脂等有机化合物、碳（包括活性碳）、氧化铝、碳化硅等无机化合物形成。多孔质层46可以是任意形态，例如，可以将这些化合物预先形成为薄膜、片材、板、织物、无纺布等成形物使用，也可以将这些化合物的粉末直接涂敷在加热器42上形成。

在陶瓷加热器42与抽吸口22之间形成冷却室52，该冷却室52构成气体流路26的一部分。构成冷却室的壳本体14的侧壁上形成有外气导入孔54。被陶瓷加热器42加热了的含有香味的气体在冷却室52与外气混合而被冷却后到达抽吸口22。外气导入口54具有与预定的外气导入量对应的开口面积。如图所示，也可以在外气导入口54的周围，在壳12上配设具有若干开口的调节环55。这时，通过调节该调节环55的相对于外气导入孔54的位置，可以调节过入冷却室52内的外气流入量。

在冷却室52与抽吸口22之间，在气体流路26内配设着复盖抽吸口22的过滤器58。通过配设过滤器58，可以调节压力损失使其可适当容易抽吸。过滤器58可由醋酯纤维素、纸浆等构成的通常香烟过滤咀材料形成。

在壳１２的第２部分１２ｂ内固定着可装卸的电源６２，电源６２将电能供给排出驱动部３８、陶瓷加热器４２及后述的控制电路７２。通过开闭闭锁壳本体１４背部开口的盖６４，可以将电源６２安装到壳本体１４上或取下。电源６２最好是直流电源，例如由市售的干电池、充电电池构成。但是，电源６２也可以是交流电源。另外，电源６２可以安装在壳本体１４的外侧，也可以单独设置而通过配线与壳本体１４连接。

在电源６２与原料容器３２之间设置了用于控制排出驱动部３８及陶瓷加热器４２的驱动的控制电路７２。如图４所示，控制电路７２具有信号电路７２ａ、驱动电路７２ｂ和电源电路７２ｃ。信号电路７２ａ连接着用于检测使用者抽吸动作的传感器７３和ＯＮ／ＯＦＦ用手动开关７４。驱动电路７２ｂ连接着排出驱动部３８和陶瓷加热器４２。电源电路７２ｃ连接着电源６２。

用于检测使用者的抽吸动作的传感器７３，与抽吸口２２相邻地配设在壳本体１４的周围。传感器７３与检测电阻变化、容量变化、压电起电力等一般的应变式压敏传感器原理相同地构成，检测叼在使用者口中的压力并产生电信号。另外，传感器７３也可以采用后述的摆动叶片板型传感器、接点型传感器、或日本特开平５－２１２１００号揭示的唇传感器等。

控制电路７２根据来自ＯＮ／ＯＦＦ用手动开关７４的信号，或者根据传感器７３的信号，与使用者的抽吸动作相吻合地使排出驱动部３８及加热器４２起动，使液体状原料排出并气化。控制电路７２中的信号处理及控制状态，例如可以是公知的摸拟控制、双位控制、或它们的组合等。

ＯＮ／ＯＦＦ用手动开关７４配设在壳体１２的第１部分１２ａ的侧面。在不使用本物品时，通过用手动将开关７４切换为关状态，可强制地使排出驱动部３８及加热器４２停止。手动开关７４由具有与电接点的微型开关等一般小型压下式开关相同原理的机构构成。

在使用本物品时，即，将开关７４切换到开状态期间，也可以使加热器４２为加热的状态。这时，控制电路７２可只控制使液体状原

料排出的排出驱动部３８的动作即可。

下面，说明图１所示香味生成物品１０的操作状况。

抽吸图１所示的香味生成物品１０时，使用者先将手动开关７４接通，叼住壳体１２的第１部分１２ａ从抽吸口２２作抽吸动作。通过该动作，从传感器７３向控制电路７２送出抽吸动作信号，因此，在控制电路７２的控制下，开始向陶瓷加热器４２通电，与此同时或经过一定时间后，排出驱动部３８动作。

这样，液体状原料３６从排出口３５排出、并被陶瓷加热器４２加热后气化。气化了的原料随着使用者的抽吸动作、与从空气取入口２４并通过节流孔２０被导入排出口３５与陶瓷加热器４２之间的主吸引空气混合后，被送到抽吸口２２。

陶瓷加热器４２的通电及排出驱动部３８的作动，例如是按图６或图７所示的动作定时图进行的。图６表示根据来自传感器７３的信号，使陶瓷加热器４２的通电加热和液体状原料３６的排出同时进行的情形。图７表示根据来自传感器７３的信号，先使陶瓷加热器４２通电预热，经过一定时间后即加热器温度上升到一定程度后，再使液体状原料３６排出的情形。

必要时，在抽吸过程中，可以通过调节调节环２８、６０来改变从空气取入口２４进入的主吸引空气量及从外气导入孔54进来的导入空气量。这样，可以改变到达抽吸口２２的含有香味的空气的味道，可以满足使用者所喜好的抽吸感觉。

如前所述，壳体１２可做成由第１部分１２ａ、第２部分１２ｂ通过连接部１３可装卸地连接的构造。在第１部分１２ａ内收容着液体状原料３６、排出头３４、陶瓷加热器４２等。在第２部分12b内收容着控制电路72、电源62等。第１及第２部分１２ａ、１２ｂ通过电线１５电连接着。因此，本香味生成物品１０可以在将第１及第２部分１２ａ、１２ｂ通过连接部１３连接成一体的状态使用，也可以如图５所示地，将第１及第２部分１２ａ、１２ｂ分开地使用。在图５所示状态，因为第１及第２部分１２ａ、１２ｂ在电线１５容许的范围内分开，所以例如，可把第２部分１２ｂ放在衣服口袋内、将第１部分１

2 a 叼在口中。另外，也可以把与第 1 部分 1 2 a 分开的第 2 部分 1 2 b 与现有的电源连接，即通过装配来使用。

下面，说明采用图 1 所示香味生成物品 1 0 的几个实验。

首先，采用若干天然薄荷油作为香味物质，采用甘油作为在香味中加入烟的烟雾生成物质，再加上水，水与甘油的浓度比约在 2： 9 8 ~ 9 0： 1 0 的范围内，调制成若干不同的液体状原料 3 6 。再用图 1 所示香味生成物品抽吸由加热各液体状原料 3 6 所得到的、含有香味物质的烟雾，该抽吸的条件是，在约 5 8 秒的期间内、一次约用 2 秒钟抽吸 3 5 cc 到 5 0 cc，约进行一分钟。其结果，水与甘油的浓度比为 50: 50，并加入若干天然薄荷油而制成的液体状原料 36，能确保排出的稳定性，旦能达到抽吸时的感觉上的满足感和视觉上的烟量感，所以在以下实验中采用该液体状原料 36 。另外，在以下的实验中，在约 58 秒的期间内，每次用 2 秒钟抽吸 35cc 至 50cc 的一个循环，约进行一分钟的标准吸烟的条件进行抽吸，另外，排出速度约采用 2 . 5 mg / 秒。

在这样的条件下，进行图 6 和图 7 所示动作定时的比较。首先，用图 6 所示的定时将加热器温度在 2 秒内从室温上升到约 4 0 0 ℃。这时，在到达可气化温度的上升途中，蓄积在加热器面上的液体状原料 3 6 一下子气化，因急剧膨胀而在排出口 3 5 附近冷凝，或者因突沸而成液滴状飞散，材料的利用率降低。接着，用图 7 所示的定时在预热时间内将加热器的温度预热到约 1 4 0 ~ 2 2 0 ℃后，在 2 秒内上升到 4 2 0 ℃ ~ 4 4 0 ℃。这时，液体状原料 3 6 随着排出而有效地气化。

使用者的抽吸时间，在图 6 中是相当于从加热器通电及排出开始到终了的时间，在图 7 中是相当于从包含预热时间的加热器通电开始到终了的时间。因此，在标准抽烟时间内，为了使用者抽吸时无不适感觉，预热的时间最好设定为约 0 . 1 秒到 1 秒的范围内。另外，预热的温度不必过高。

例如，用 2 秒的预热时间将加热器预热到约 4 0 0 ℃时，其后排出的原料急剧气化膨胀，在排出口 3 5 附近冷凝的比例增加，反而使

材料的利用率降低。另外，从将抽吸口２２的传感器７３叼在口中的动作起经过２秒后，进入抽吸动作的时间错开而产生不适感觉。在该实验中，在图７所示动作定时中，从室温到温度１４０℃的预热用了约０．５秒，到温度２２０℃的预热用了约１秒的预热时间。

另外，当陶瓷加热器４２的表面无多孔质层４６、是平滑表面时，液体状原料３６不容易被加热器面捕捉，会出现弹起等现象。这时，无论在图６或图７所示的定时中，都可看到材料的利用率降低的倾向。

通过节流孔２０后通过间隙２７的主抽吸空气，其流速大到达一定程度时，能提高液体状原料的气化效率。关于这一点，在标准条件即每次抽吸３５ cc ~ ５０ cc / ２秒的吸烟条件下，节流孔２０的位置在距间隙２７中心约３０ mm以内，通过节流孔２０的空气速度约为６m / 秒以上时，可得到较好的结果。这相当于将节流孔２０的开口断面面积做成约３ mm^2 以下。但是，将开口断面面积减小（加快流速）到令使用者用口不容易抽吸的程度是无意义的。考虑到上述这点，节流孔２０的开口断面面积的下限最好约为０．６ mm^2 。

间隙２７的大小、即排出口３５与陶瓷加热器４２之间的垂直方向距离也对液体状原料３６的气化效率有影响。为了抑制因排出口３５附近的气体冷凝引起的材料的利用率降低，必须使陶瓷加热器４２与排出口３５以约２ mm以上的距离相对。

下面，说明几个本发明其它实施例的香味生成物品。在表示这些实施例的图中，与前述实施例中相同的部分注以相同标号，其详细说明从略。

图８是表示本发明另一实施例香味生成物品的概略图。

该实施例的香味生成物品与图１所示的香味生成物品类似，其不同之处是，排出头３４的排出口３５的朝向与图１中所示构造不同，偏转了９０°，朝向抽吸口２２。因此，与排出口３５相对的陶瓷加热器４２也与图１所示构造不同地偏转了９０°。另外，由于排出头３４配置在节流孔２０内，所以，作为气体流路２６发挥作用的节流孔２０的实际开口由节流孔２０和排出头３４双方的尺寸限定。

图9是表示本发明另一实施例香味生成物品的概略图。

该实施例的香味生成物品的特征点是，首先，壳体12不能分离成第1及第2部分12a、12b（见图1），液体状原料36、排出头34、陶瓷加热器42、电源62、控制部72等内藏在一个壳本体14内。但是，在壳本体14上，通过连接部18可装卸地安装着口罩16，在这里形成抽吸口22。口罩16可由塑料、木材等材料形成。连接部18可采用螺丝或嵌接等公知构造。另外，也可以不用口罩16，而将过滤器插入壳本体14中使用。

其次，附设在原料容器32上的排出头34的排出口35只有一个，朝向抽吸口22地将液体状原料36排出。因此，与排出口35相对的陶瓷加热器42是与图8所示构造相同的朝向。再者，在气体流路26内未配设节流板21（见图1），由支承陶瓷加热器42的支承部件44的限制，使流入空气流过陶瓷加热器42上。

图10是表示本发明另一实施例香味生成物品的概略图。

该实施例的香味生成物品与图9所示香味生成物品类似，不同之处是，原料容器32具有手动的排出操作机构。为此，在原料容器32上，连接着伸到壳本体14外侧的操作杆76。压下操作杆76时，就可以放出相当于一口喷烟量的原料，该原料作为液体飞沫或液滴供给陶瓷加热器42上。另外，控制电路72接受到杆76的压下动作信号后，根据该信号，对陶瓷加热器42供电加热，使原料的飞沫气化。即，杆76具有代替图1所示香味生成物品的排出驱动部38和检测使用者抽吸动作的传感器73二者的作用。

图10所示香味生成物品中，在原料容器32上连接着用于补给液体状原料36的注入口82。注入口82的端部露出于壳本体14的外侧，从这里可以将液体状原料注入原料容器32内。如前所述，原料容器32具有能贮藏与使用者的若干口喷烟量对应量的液体状原料36的容量。但是，由于能补给原料，所以，不必更换原料容器32，可以更持久地使用本香味生成物品。

另外，为了能看见原料容器32内的剩余量，在壳本体14的侧壁上形成与原料容器32对应的透明观察窗84。因此，在这里原料

容器３２本身也由透明或半透明容器构成。通过观察窗８４可以监视原料容器３２内的液体状原料36的剩余量，从而可以知道原料补给的时间。

为了监视原料容器３２内剩余量，也可不采用图１０所示构造，而采用电气剩余量检测机构和电气显示机构的组合。电气剩余量检测机构例如为检测原料容器３２的导电性变化的机构，电气显示机构例如为采用配设在壳本体１４外面上的发光二极管的机构。另外，监视原料容器３２内的剩余量的机构，也可以是采用棱镜光学地检测剩余量的方式。

图１０所示的香味生成物品中，电源６２收容在电源盒６６内，该电源盒６６通过连接部６８可装卸地安装在壳本体１４上。连接部６８可采用螺丝或嵌接等公知构造。由于采用与电源６２的大小对应长度的电源盒６６，可以容易地更换电源６２，并且壳本体１４内的部件的修理、更换也容易。

图１１是表示本发明另一实施例香味生成物品的概略图。

该实施例的香味生成物品与图１０所示香味生成物品类似，不同之处是，排出操作杆７６连接在附设于排出口３５上的喷雾器８６上。喷雾器８６可以将相当于一口喷烟的原料以液体飞沫或液滴状态供给到陶瓷加热器４２上。

在图１１所示香味生成物品中，在冷却室５２内配设着充填物５６。通过配设充填物５６，能促进已气化的香味成分的冷却效果，并且可调节压力损失而适当程度地容易抽吸。充填物５６例如可采用醋酯纤维素、纸浆等构成的纤维成形体、玻璃、氧化铝粒子那样的粒状物等。

图１２是表示本发明另一实施例香味生成物品的概略图。

该实施例香味生成物品的特征是，在陶瓷加热器４２与冷却室５２之间、在气体流路２６内，可装卸地配设着用于生成使用者所抽吸香味等的固体状原料成形体９２。

固体状原料成形体９２，根据用途可含有从各种天然物提取出的物质和／或其组成成分。成形体９２所含有的香味物质，例如可采用

薄荷、咖啡、或香烟提取成分、香烟凝聚物成分等的香烟成分。

当固体状原料成形体９２与壳本体１４的内面之间无间隙时，应采用具有良好透气性的成形体９２。这时，空气取入口２４与抽吸口２２之间的气体流路２６通过成形体９２的内部。如后所述地，当固体状原料成形体９２与壳本体１４的内面之间有间隙时，可使用透气性差或无透气性的成形体９２。这时，空气取入口２４与抽吸口２２之间的气体流路２６通过成形体９２与壳本体１４的内面之间的间隙。

图１３是表示本发明另一实施例香味生成物品的概略图。

该实施例的香味生成物品与图１２所示香味生成物品的不同之处是，用于加热成形体９２的线圈加热器９４配设在成形体９２的周围。另外，也可以在成形体９２上形成孔，将加热成形体９２用的加热器配置在该孔内。

线圈加热器９４与陶瓷加热器４２一起由控制电路７２控制，与使用者的抽吸动作吻合地被供电。但是，当成形体９２的热容量大时，即使与使用者的抽吸动作开始相吻合地向线圈加热器供电，香味的生成也可能会相当地延迟。因此，这种情况下，在使用本物品时，在把开关７４切换到接通状态期间，也可以把线圈加热器９４一直设定为加热的状态，

另外，成形体９２做成为与壳本体１４内面之间有充分间隙的尺寸。因此，空气取入口２４与抽吸口２２之间的气体流路２６的主部分通过该上述间隙。

图１４是表示本发明另一实施例香味生成物品的概略图。

该实施例香味生成物品的特征是，为了检测使用者的抽吸动作，采用了摆动叶片板型传感器。更具体地说，在陶瓷加热器４２与冷却室５２之间、在气体流路２６内配设着摆动薄板１０２。另外，在陶瓷加热器４２与薄板１０２之间、在气体流路２６内，配设着与薄板１０２相对的、具有开口１１４的节流板１１２。薄板１０２与作为传感器电路的开关杆的导电性杆１０４一体地连接。与导电性杆１０４相对地在壳本体１４的内面上配设着传感器电路的电气接点１０

8。

薄板１０２与杆１０４一体地并可摆动地枢支在壳本体１４内面上的支承部１０６上，并且被内藏于支承部１０６内弹簧朝图中反时针方向推压。因此，通常时，薄板１０２与节流板１１２相接，杆１０４与接点１０８为非接触状态。但是，当使用者的抽吸动作开始时，在节流板１１２处高速流动的气流使薄板１０２朝图中顺时针方向摆动，使杆１０４与接点１０８接触。这样，由摆动薄板型传感器检测出的使用者的抽吸动作信号被传递到控制电路７２，根据该检测信号，可控制排出驱动部３８和陶瓷加热器４２。

图１５是表示本发明另一实施例香味生成物品的概略图。

该实施例香味生成物品的特征是，为了检测使用者的抽吸动作，采用了接点型传感器。更具体地说，在壳体１２的外面中央与抽吸口侧端部，分别配设了由环状的导电性板构成的电气接点１２２、１２４。电气接点１２２、１２４构成传感器电路的开关，接点１２２、１２４由导电体连接，传感器产生检测信号。该状态例如是，使用者捏住中央的接点１２２并且用口叼住抽吸口侧的接点１２４这样二个条件同时满足的情形。这样，由接点型传感器检测出的使用者的抽吸动作信号被传递到控制电路７２，根据该检测信号，可控制排出驱动部３８和陶瓷加热器４２。

图１６是表示本发明另一实施例香味生成物品的概略图。

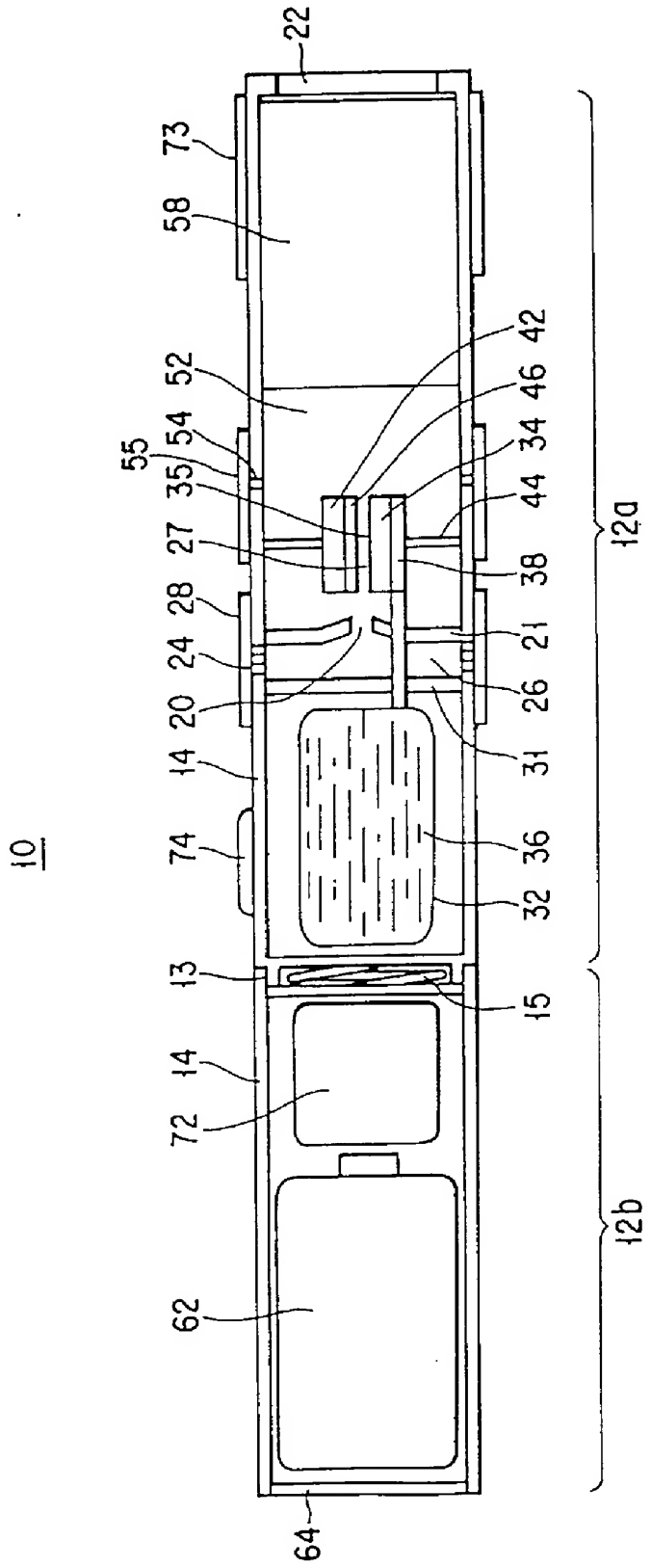
该实施例的香味生成物品，具有与图１所示香味生成物品相同朝向配置的排出头３４的排出口３５以及与排出口３５相对的陶瓷加热器４２。但是，壳体１２不能分离成第１及第２部分１２ａ、１２ｂ（见图１），液体状原料３６、排出头３４、陶瓷加热器４２、电源６２、控制部７２等内藏于一个壳本体１４内。

另外，虽然在气体流路２６内未配设节流板２１（见图１），但是只在陶瓷加热器４２的支承部件４４与排出头３４对应的中央部有缝隙。因此，从空气取入口２６进入的空气全部通过排出口３５与陶瓷加热器４２之间的间隙。

以上，为了理解本发明内容，分几个实施例对本发明各部分的特

征作了说明，但这些特征可以根据目的适当组合。即，在本发明思想的范围内，还可以做出图示的实施例以外的各种实施形态。

说　明　书　附　图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12a
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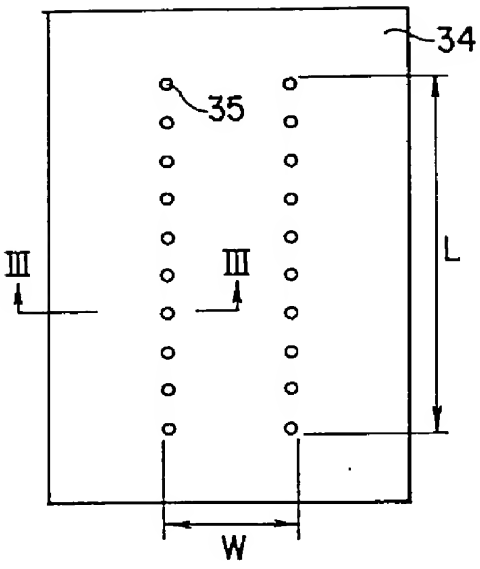
图 1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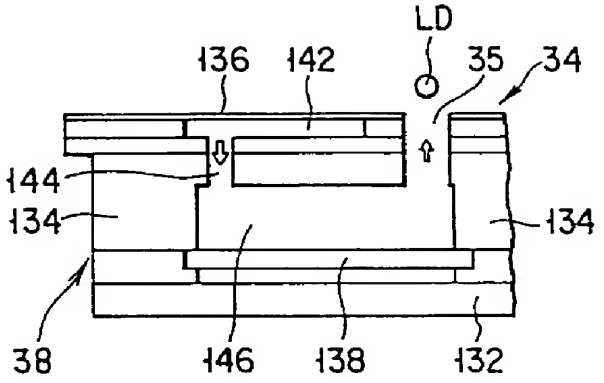
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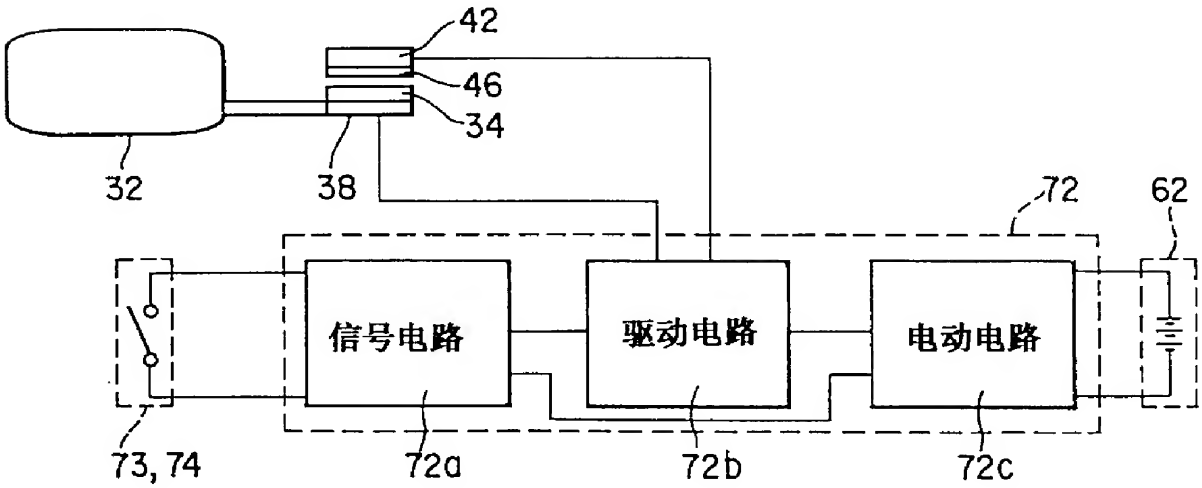
图 3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信号电路
驱动电路
电动电路
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72c

图 4

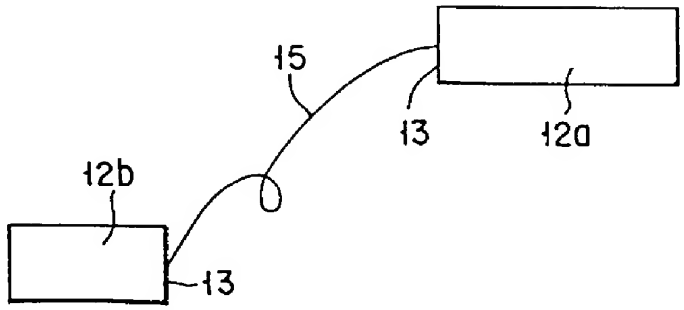
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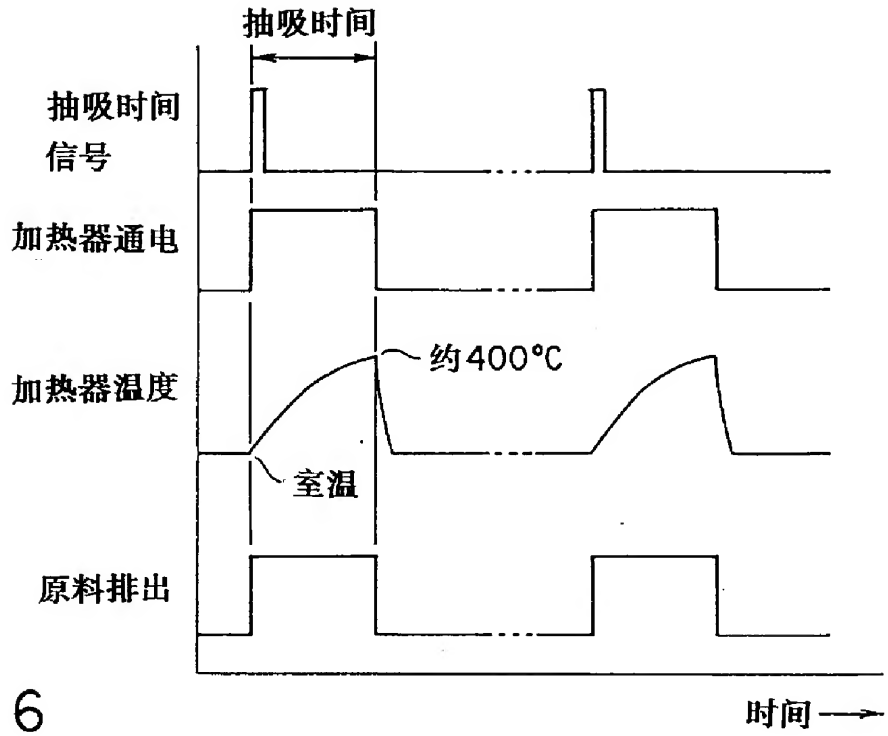
图 5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抽吸时间
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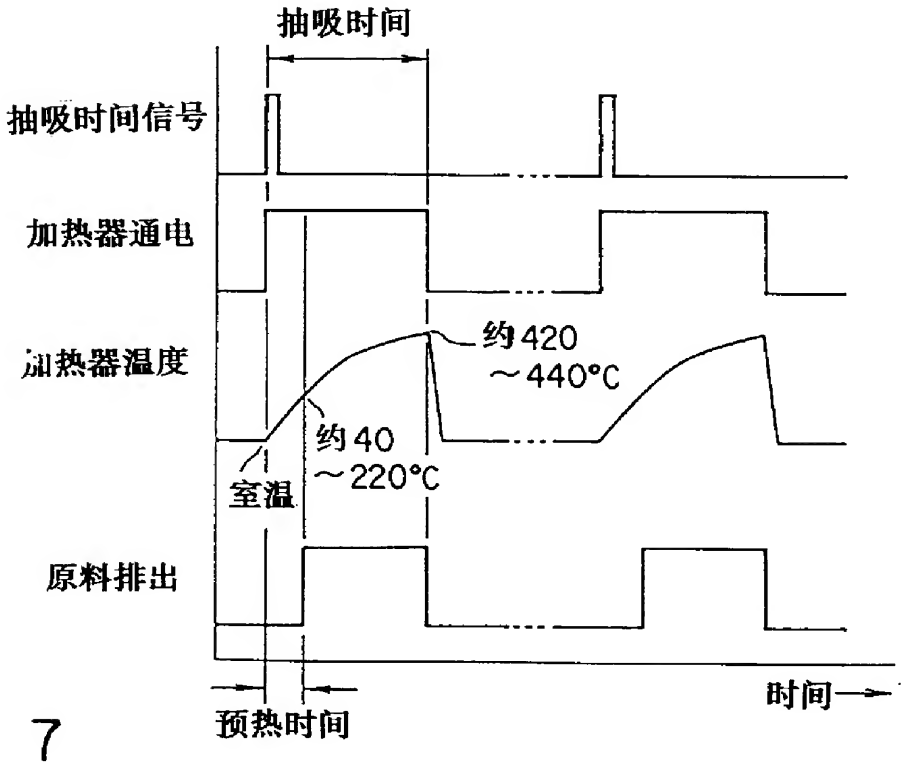
室温
原料排出
时间

图 6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原料排出
时间
预热时间

图 7

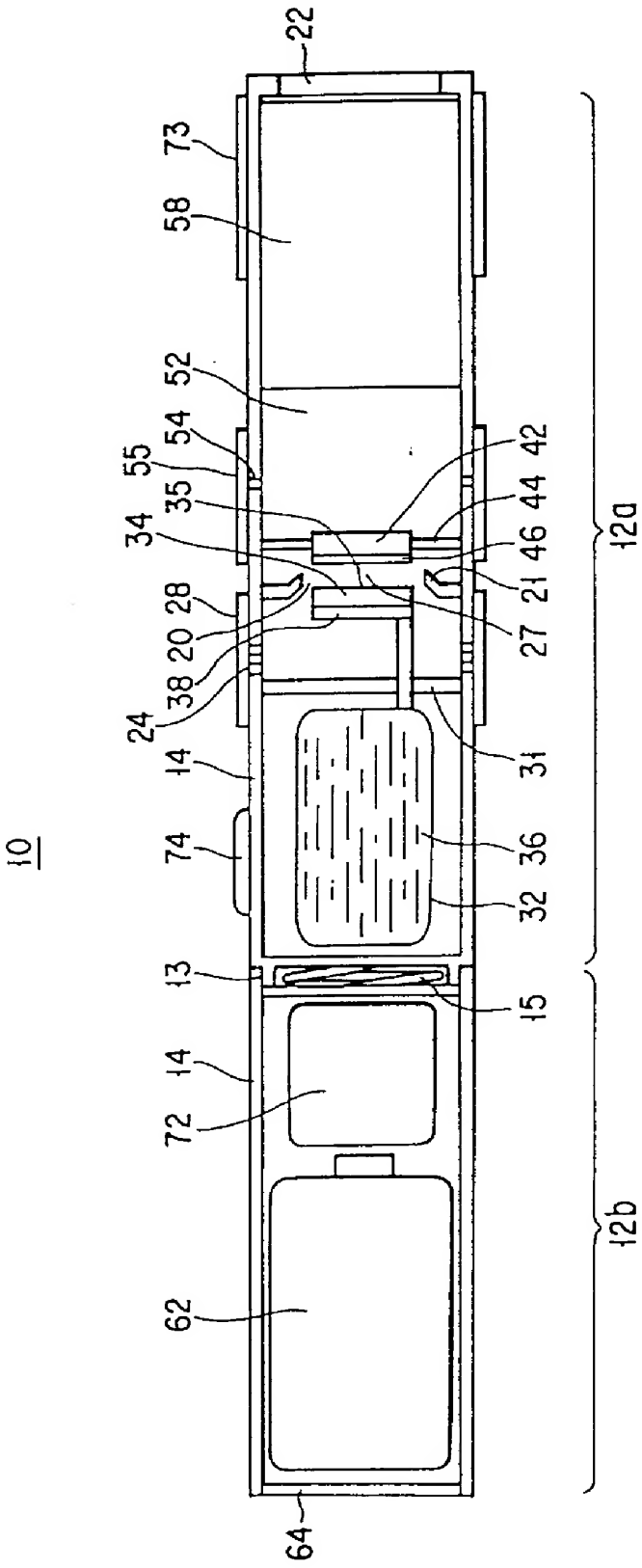
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图 8

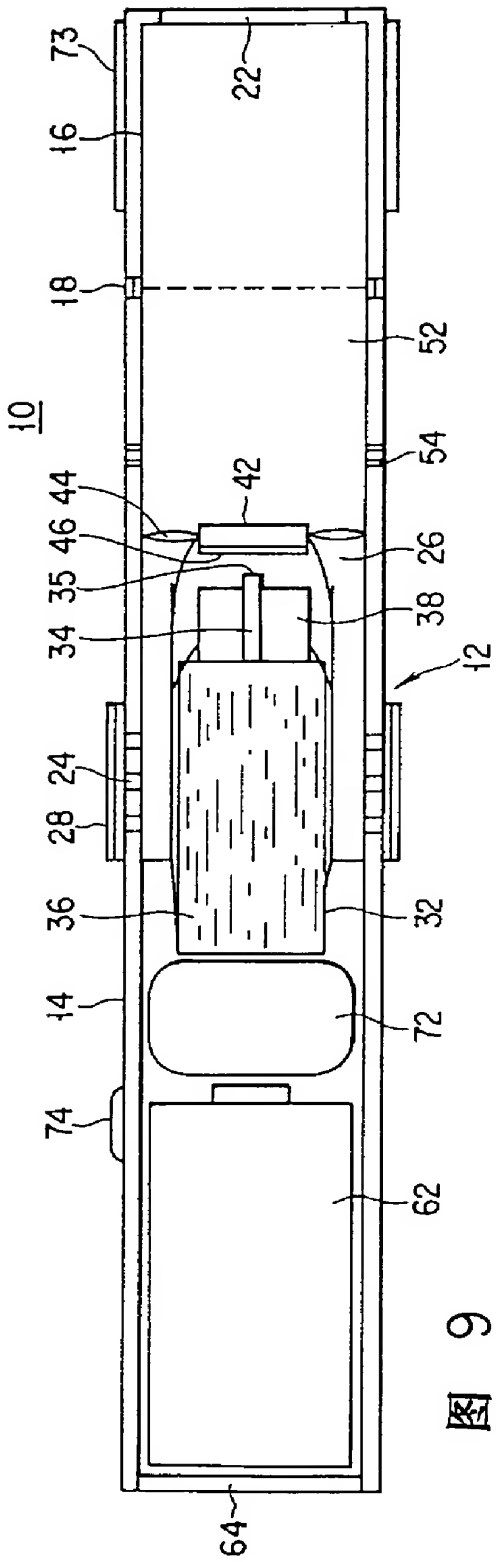
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图 9

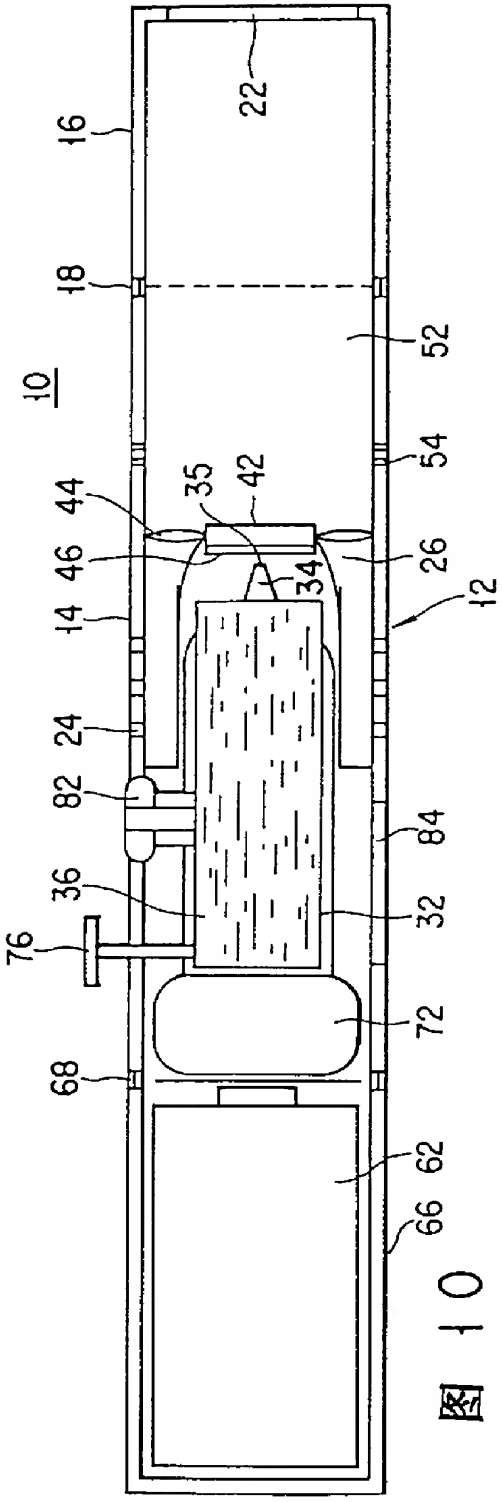
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图 10

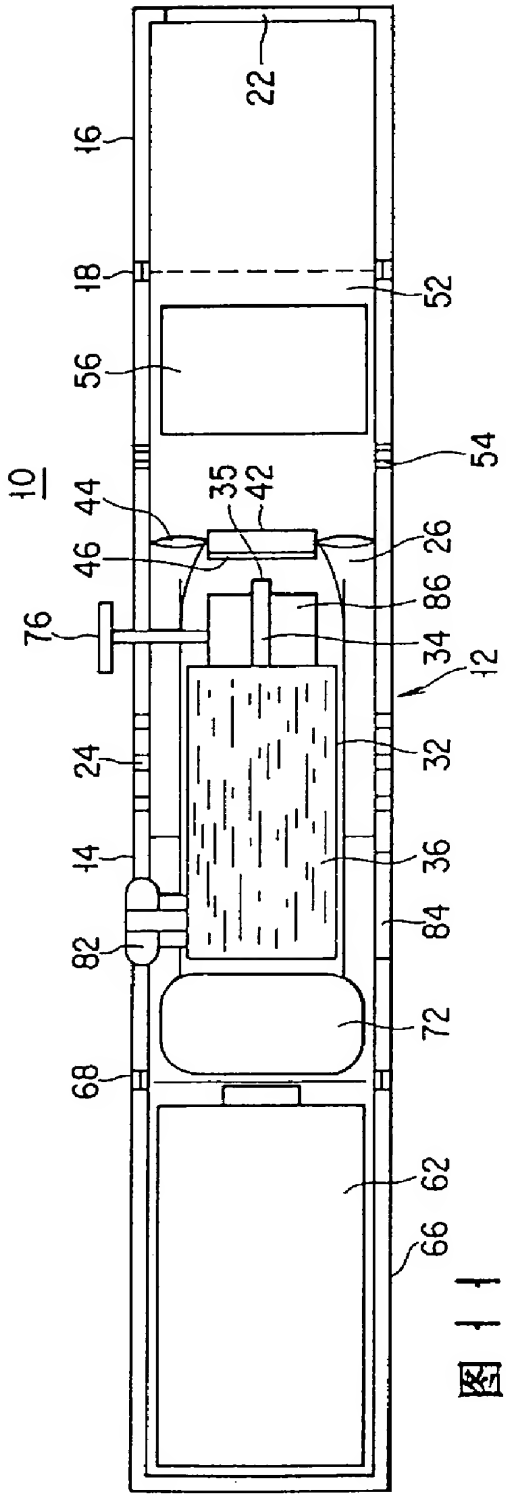
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图 11

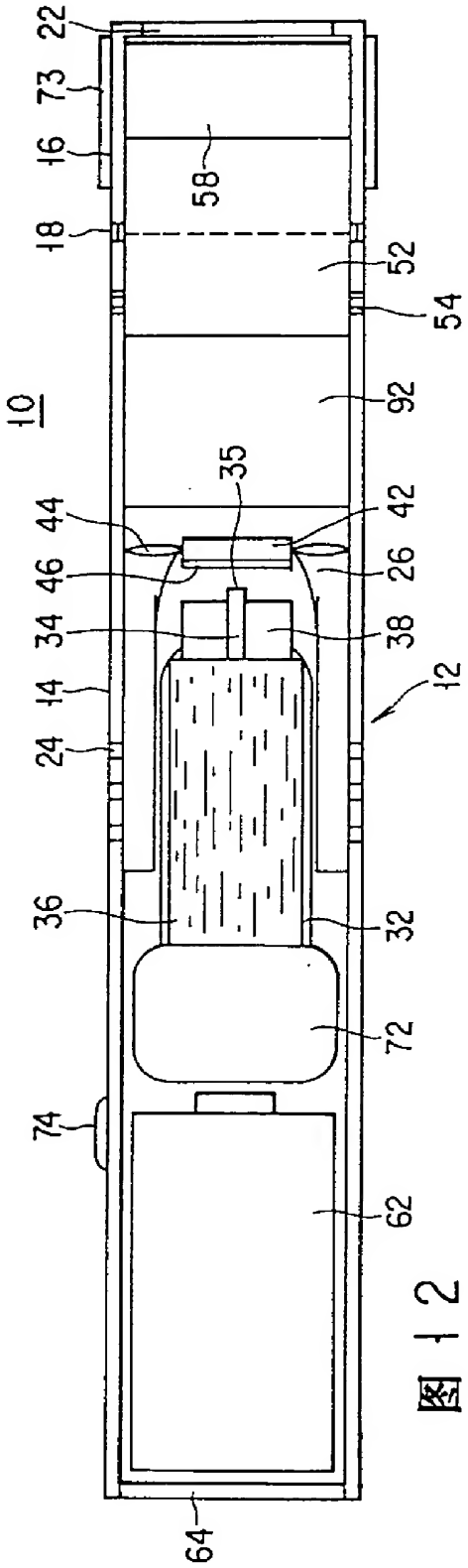
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图 12

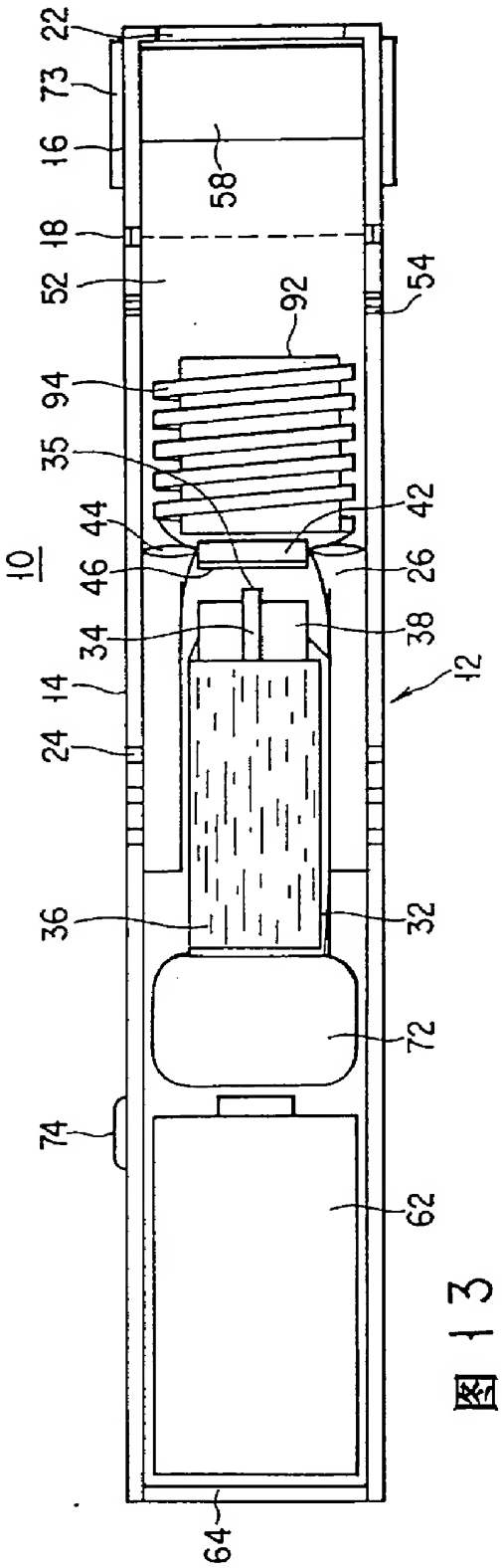
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图 13

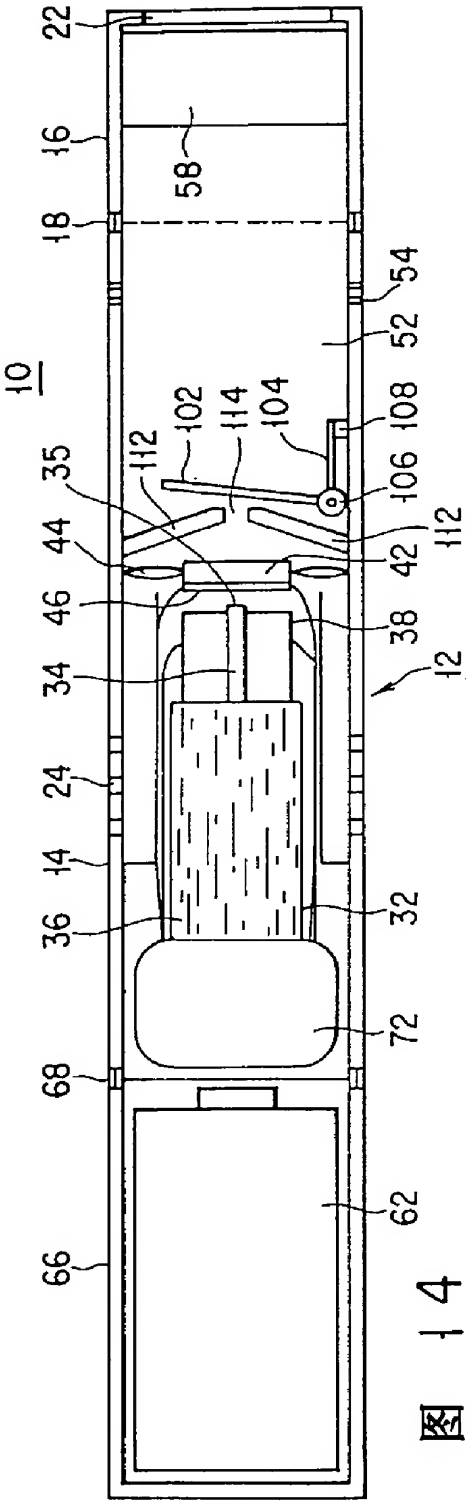
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图 14

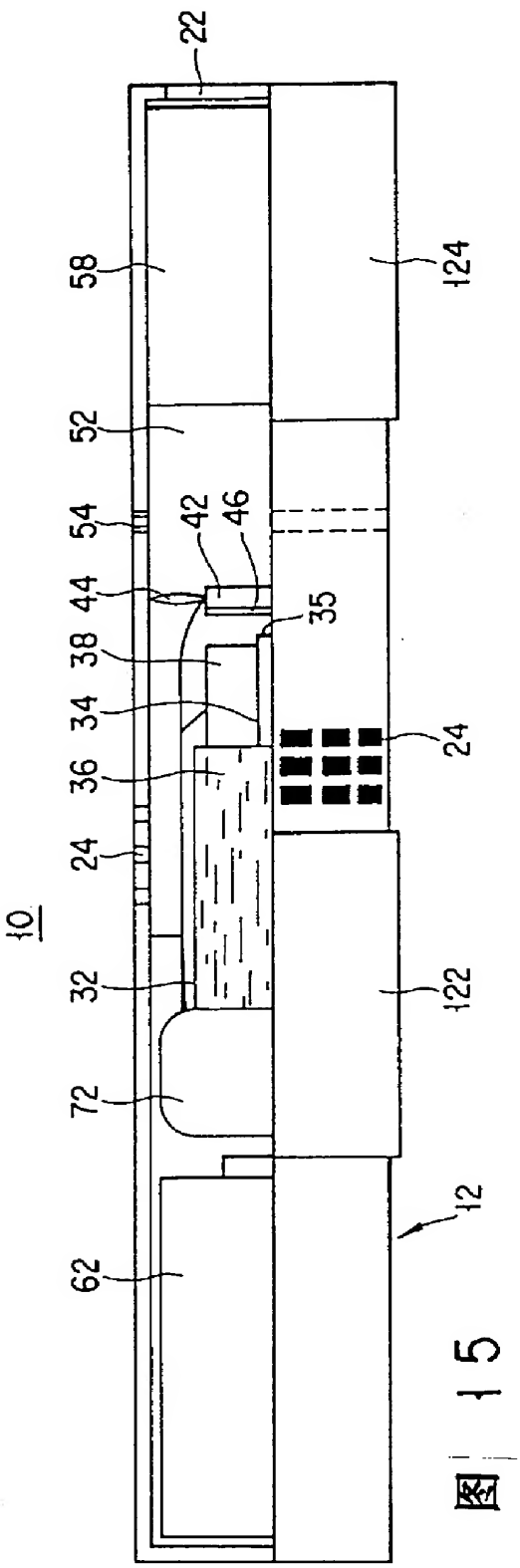
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图 15

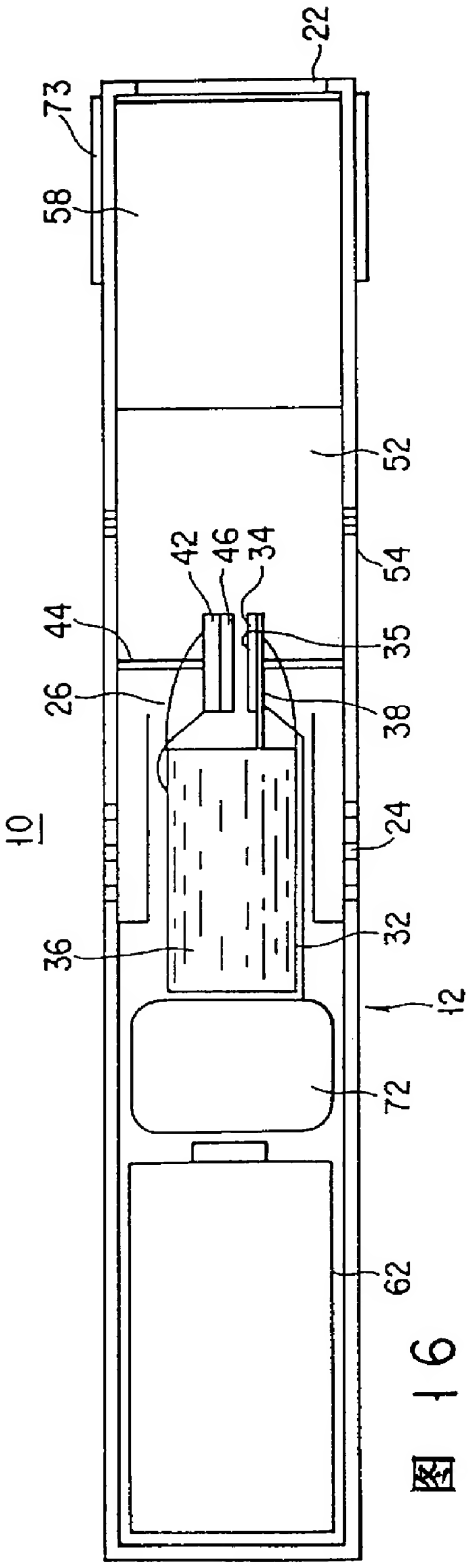
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图 16

1 of 1 DOCUMENT

CN1196660A 1998-10-21 **Flavor producing article** (en)

English Abstract:

The patent refers to the field of 'smokers' requisites'. It has shells (12) that the aroma offered in this invention turns into the article (10), this shell (12) is connected the 2 part (12a,12b) to form releasably. In the 1 part (12a) of the shell, form the gas flow path (26) of fetching the entry (24) from the air to the pump-out slot (22). Contain the built-in raw materials container (32) of the liquid raw materials (36) of the aroma material in the 1 part (12a). The nozzle (35) of the raw materials container (32) is disposed in the gas flow path (26), instead of disposing the ceramic heater (42) relatively. The liquid raw materials (36) feed from the nozzle (35) into the ceramic heater (42) and heated, gasified in the gas flow path (26). The control circuit (72) and built-in power (62) are in the part (12b) of shell the 2.

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Application Number: CN97190727 A

Application/Filing Date: 1997-06-09

PCT Application: WO JP97 1997-06-09

Priority Number and Date: JP 08155636 1996-06-17

Classifications: ECLA: A24F47/00B2E IPC[]-Main: A24F 47/00 A, IPC-1-8: A24F47/00 20060101C I20051008RMEP (20060101) Core20051008 (C I R M EP)
IPC-ADDL-CL: A24F47/00 20060101A I20051008RMEP (20060101) Advanced20051008 (A I R M EP)

English Description:

Aroma turns into articles

This invention involves sucking aroma or enjoying and similar to smoking the aroma that fun uses turns into articles, more particularly, involve one through burn, but heat with electric heater liquid raw materials become as suck target thing namely aroma of aroma, turn into articles next life.

At prior art,it if you can't put forward by various, burn cigarette but can enjoying last article the aroma and the simulations of flue gas of cigaretteses.

In special 3-232481 such as open flat such as patent gazette such as Japanese, put forward simulation smoke model concept of article. The articles that this communique announced, for example use solid raw materials of rod shape, heat raw materials of this solid with heating element, produce the sucking target's thing in aroma,etc.. The question of this kind of article is, when raw materials of solid are heated continuously, there is much waste of raw materials, when the user wait to heat solid raw materials sucking, begin, produce greater time bias turn into, with aroma in to suck user.

In order to solve the above-mentioned problem, announced one is cut apart into a plurality of partial solid aroma of raw materials and send articles on the of special open flat 3-277265. In the articles that this communique announces, every part of raw materials of solid passes the user's each aerosol spraying and is heated sequentially, produce the sucking target's thing in aroma,etc.. The question of this article is, solid raw materials and heating element form integrative aroma and produce the media. So, after the consumption of raw materials, should change the heating element together with raw materials or abandon, on this pair of environments, it is unfavorable on economy.

The special open flat 5-212100 announced on one is used for measuring gushing out the smoky organization of the user. In the articles that this communique announces, control the heating element which drive heating aroma raw materials according to the signal received from the movements of user's lip.

In the U.S. Patent No. 4945931, announce one use, pressurize smog simulation of container, smoke article. In the articles that this communique announces, make the sheet metal swing to make the outlet port of the container open mechanically through the user's suction actions, emit the smog. In addition, have announced a kind of article disposing the heating element in this communique in container mouth as the alteration example, this heating element, to heated by the vaporization heat cooled smogging. The question of the articles that this communique announces is, because with the valve opening and closing with the user's suction action intensity, close the smog which pressurizes the state in the container, when the valve is opened, then the smog is leaked heavy. Namely in the article of communique this, can't emit suitable one a certain amount of smog to smoke the weight continuously, probably all emit the smog pressurized after the suction actions of 2, 3 times.

This invention is seeing that the above-mentioned problem was made, its purpose lies in offering one kind not to will not cause the waste of raw materials of aroma, and can make one of the user's smoke and turn into time identical aroma and turn into articles with aroma.

The first technological scheme of this invention, characterized by, aroma turns into articles, include housing, raw materials container, discharge the driving mechanism, gasify organization and power;

Above-mentioned housing have, draw in air air that inside spend, fetch entry and user and suck the pump-out slot that aroma uses, form the gas flow path between fetching entry and pump-out slot;

Preserve liquid raw materials containing the aroma material in the above-mentioned raw materials container at least, and have nozzles of raw materials, these raw materials container are mounted into housing;

The aforesaid discharges driving mechanism and is used for discharging aforesaid raw materials from raw materials container as liquid droplet through the above-mentioned nozzle;

The aforesaid gasifies the organization to dispose in the above-mentioned gas flow path, it accepts that stated aforesaid liquid droplet of aforesaid raw materials that raw materials container were discharged in the past, and heats it, and make it gasify in electricity utilization;

To gasify organization, supply electric energy while being above-mentioned above-mentioned power.

The second technological scheme of this invention, characterized by, in the aroma of the first technological scheme turns into articles, also there are sensors and controlling organizations; This sensor is used for measuring the user's sucking movements; Controlling organization this, according to from aforesaid sensor signal, control, discharge driving mechanism while being aforesaid, make aforesaid raw materials state and discharge in raw materials container in the past.

The third technological scheme of this invention, characterized by, in the aroma of the second technological scheme turns into articles, the above-mentioned sensor has around the pump-out slot, disposes the force sensor on the aforesaid shell.

The 4th technological scheme of this invention, characterized by, in the aroma of the second or the third technological scheme turns into articles, the above-mentioned controlling organization follows the signal from aforesaid sensor, control and gasify the organization, in order to make the evaporation organization generate heat.

The 5th technological scheme of this invention, characterized by, in the aroma of the 4th technological scheme turns into articles, above-mentioned controlling organization before aforesaid raw materials are discharged, preheat, control, gasify organization and discharge the driving mechanism while being aforesaid while being aforesaid not gasifying organizationing while being aforesaid first.

The 6th technological scheme of this invention, characterized by, in the aroma of the first technological scheme turns into articles, the above-mentioned power is disposed in housing.

The 7th technological scheme of this invention, characterized by, in the aroma of the 6th technological scheme turns into articles, the 1st and the 2nd part that the above-mentioned housing connected through the electric wire forms, above-mentioned gas flow path, aforesaid raw materials container, discharge driving mechanism and gasify organization to dispose in the above-mentioned section 1 while being above-mentioned while being above-mentioned, the aforesaid power is disposed in the the second aforesaid part.

The 8th technological scheme of this invention, characterized by, in the aroma of the 7th technological scheme turns into articles, the first and the 2nd part of the above-mentioned housing's passes the capable of mounting and demounting of interconnecting piece.

The 9th technological scheme of this invention, characterized by, in the aroma of the first technological scheme turns into articles, also operate the aforesaid operating arm to discharge driving mechanism manually.

The 10th technological scheme of this invention, characterized by, the aroma of any technological scheme turns into articles in the first to 9, the aforesaid has porous layers to gasify the organization, liquid droplet of aforesaid raw materials is fed into this porous layer.

The 11th technological scheme of this invention, characterized by, the aroma of any technological scheme turns into articles in the first to 10, the aforesaid gasifies organization and aforesaid nozzle to dispose relatively, dispose the throttle orifice in the aforesaid gas flow path, state air, fetch air that entry draw in, lead aforesaid nozzle to and gasify the interval between organization while being aforesaid in the past throttle orifice this.

The 12th technological scheme of this invention, characterized by, the aroma of any technological scheme turns into articles in the first to 11, for being outside angry in direct into the aforesaid gas flow path while gasifying organization and aforesaid pump-out slot while being aforesaid, form the air introduction hole outside on the aforesaid shell.

The 13th technological scheme of this invention, characterized by, the aroma of any technological scheme turns into articles in the first to 12, also there are solid raw materials shaped body containing the aroma material at least, solid this raw materials shaped body locate, gasify between the organization and aforesaid pump-out slot disposing in the gas fluid while being aforesaid.

The 14th technological scheme of this invention, characterized by, in the aroma of the 13th technological scheme turns into articles, also there is a heating machanism used for heating the above-mentioned shaped body.

The aroma according to this invention turns into articles, does not waste the raw materials of aroma, and smoke and turn into time with aroma identically of the user's. Especially, through discharging the driving mechanism according to the signal control of coming from measuring the sensor that users sucked movements, neither waste raw materials but also can always offer stabilized aroma. In addition, because can separate, become built-in partial sum of power with that mouth holding part releasably housing, so, can use this aroma to turn into articles more easily.

Fig. 1 shows embodiment's aroma of this invention turns into the skeleton diagram of articles.

Fig. 2 shows the aroma illustrated in Fig. 1 turn into arranging the plan view appeared of articles.

3 Fig. until III-III line slice arrange, hold up one's head and discharge the enlarged skeleton diagram of the drive portion in the 2 Fig..

Fig. 4 shows the aroma illustrated in Fig. 1 turn into the picture of the control system of articles.

Fig. 5 shows the aroma illustrated in Fig. 1 turn into a picture employing state of articles.

Fig. 6 shows the aroma illustrated in Fig. 1 turn into the picture of the regular example of movement of the movements of the electromotion and discharge drive portion of the ceramic heater of articles.

Fig. 7 shows the aroma illustrated in Fig. 1 turn into the picture of regular example of another movement of the movements of the electromotion and discharge drive portion of the ceramic heater of articles.

Fig. 8 shows another embodiment's aroma of this invention turn into the skeleton diagram of articles.

Fig. 9 shows another embodiment's aroma of this invention turn into the skeleton diagram of articles.

Fig. 10 shows another embodiment's aroma of this invention turn into the skeleton diagram of articles.

Fig. 11 shows another embodiment's aroma of this invention turn into the skeleton diagram of articles.

Fig. 12 shows another embodiment's aroma of this invention turn into the skeleton diagram of articles.

Fig. 13 shows another embodiment's aroma of this invention turn into the skeleton diagram of articles.

Fig. 14 shows another embodiment's aroma of this invention turn into the skeleton diagram of articles.

Fig. 15 shows another embodiment's aroma of this invention turn into the skeleton diagram of articles.

Fig. 16 shows another embodiment's aroma of this invention turn into the skeleton diagram of articles.

[Best embodiment of this invention]

Below, consult the figure embodiment who explain this inventions.

Fig. 1 shows embodiment's aroma of this invention one turns into the skeleton diagram of articles.

It has cylindrical housing 12 that aroma turns into the article 10, the external diameter of this housing 12 can hold the magnitude in chewing in the mouth for the user. Housing 12 is formed by the second part of 12b of section 1 12a and built-in power,etc. held in user's mouth. These 2 some 12a, 12b are connected releasably through the interconnecting piece 13 that is formed on the body 14 of shell. There are the electrically connected through 15 of electric wire on 2 some 12a, 12b,accommodate and correspond to interconnecting piece 13 electric wire 15 in space that be taken shape on shell body 14. The interconnecting piece 13 can adopt known constructions such as the screw head or rabbetting,etc.. The body 14 of housing 12 is completed with materials such as plastics, metal, pottery, timber,etc..

On the end of section 1 12a of housing 12, it is for users to suck the pump-out slot 22 that aroma uses to take shape. In section 1 middle part of 12a, form, draw in housing 12 several air of inside, fetch the entry 24 air. In the air fetches the entry 2 4 and pump-out slot 22, forms the flow path 26 of gas in housing 12. The air fetches the entry 24 and has and books the correspondent opening area of the air drawing in amount. In addition, as shown, fetch in the air around the entry 24, can also dispose the regulating ring 28 with several openings on housing 12. At this moment, through fetch, regulate position of regulating ring 28 this by 24 entry to air, can regulate and enter air inflow in housing 12.

Disposing the centre on housing 12 has throttle plate 21 in the throttle orifice 20, this throttle plate 21 is located in flow path 26 of gas. Make and fetch entry 24 inlet airs function of 20 of throttle orifice since air along after state by surface current of heater 42s ceramic.

Section 1 inboard of 12a of housing, from gas wall in the 31 chambered space 26 flow path, fixing the container 32 of raw materials releasably, is preserving liquid raw materials 36 which produce aroma,etc. that users suck in the container 32 of these raw materials. The quantity of liquid raw materials 36 that the container 32 of raw materials is preserving corresponds to weight of aerosol spraying of several times of the user's. In addition, raw materials container 32 can be installed in outside of the body 14 of shell. Unless at this moment, can last shell body 14 raw materials container the heads of 32,also can only after state 35 nozzles last shell body 14.

The liquid raw materials 36 contain the aroma material at least. For example, here as while only using the articles which suck aroma such as the peppermint, coffee, the liquid raw materials 36 can be raw materials that only produced aroma. However, the liquid raw materials 36 can contain the material producing the smog while heating in order to still produce cigarettes while producing aroma. Produce the material of the smog, can adopt ethanol type, carbohydrate, water or their more than 2 types of admixtures. The ethanol that talked about herein, for example there are glycerine, propylene glycol, their admixture.

Namely, the liquid raw materials 36 can contain from extractive material and/or their constituent in various natural things according to their uses. For example, while regarding this article as the articles similar to the cigarette, can contain the cigarette composition that the cigarette extract composition or cigarette condensed the thing composition etc. in the liquid raw materials 36.

Raw materials 32 container have, arrange, hold up one's head 34, this arrange, hold up one's head, 34 have several used for transecting housing 12 direction discharge liquid raw materials 36 nozzle 35. Arrange and appear 34 to get near the side of pump-out slot 22 even more than the throttle orifice 20. In order to discharge liquid raw materials 36 from container 32 of raw materials through the nozzle 35, dispose and discharge the drive portion 38 adjacent to nozzle 35ing. Arrange, hold up one's head 34 and discharge 38 drive portion utilize liquid of piezoelectric element discharge organization (specially common clear 53-45698 of and Japan the same as way principle that U.S. Patent No. 3596275 announces) forms.

For example as shown in Fig. 2, nozzle 35 their each 10 dispose 20 together within the range of arranging and appearing width W about 2mm, length L about 5mm above of 34. Nozzle the arrange centres of 35 with after state identical roughly in centre of heater 42.

Fig. 3 shows arranging and appearing 34 and discharging the enlarged skeleton diagram of the drive portion 38 of III-III line slice along in Fig. 2. Namely, Fig. 3 shows the correspondent section of row with a nozzle 35, with the correspondent fault plane of another nozzle 35, it is the bilateral ubiety with the fault plane illustrated in Fig. 3.

As shown, on the base plate 132 of conductor arrangement, support the fluid recesses or holes of liquid raw materials 36 in order to form, superpose the frame 134 formed by several parts. The recesses formed by this frame 134 are all covered by the membrane 136 except several nozzles 35. In order to be held up in the liquid raw materials 36 temporarily, form below of the discharge outlet 35 the liquid holdup portion 146. The bottom plate of department 146 of liquid holdup is formed by electrode 138 with diaphragm function.

Liquid raw materials 36 coming out from the container 32 of raw materials are sent through the narrow flow path 142 first, smaller than several 144 sucking hole of 35 nozzle, reach liquid holdup portion 146 from diameter. Under the control of control circuit 72, when the electrode 138 is shaken and operated, the liquid raw materials 36 choose ground covers to discharge from the small nozzle 35 of flow impedance. Liquid raw materials 36 discharging are fed into the ceramic heater 42 as liquid droplet LD.

Discharge organization on liquid raw materials 36, can adopt Japan whom common clear 61-59911 grade announce utilize, heat way that bubble pushes out of that treatment fluid produce specially, whom U.S. Patent No. 3060429,etc. announce make particle of treatment fluid bring electricity that electric field control way wait and well-known marking ink squirt organization,etc.. In addition, can adopt liquid 36 raw materials as pressurized liquid, through open and close, buy in nozzle 35 valve, go on discharge organization that control.

Dispose the ceramic heater 42 in the flow path 26 of gas with the nozzle 35 relatively. The ceramic heater 42 is fixed on inner face of the body 14 of shell by the supporting member 44. 27 interval held up one's head between the 34 35 nozzle and ceramic 42 heater to arrange can through come out air from 20 throttle orifice. So, fetch the inlet air of entry 24 from the air in interval 27 the ones that led between the nozzle 35 and ceramic heater 42 of throttle orifice 20.

Drive raw materials corresponding to a aerosol spraying emitted from the nozzle 35 from discharging the drive portion 38, feed into the ceramic heater 42 as the liquid priming or liquid droplet. The ceramic heater 42 is formed by ceramic plate and coating heating unit of resistor on it, so accept raw materials flange that priming use and heat heating machanism that flange

this use, make, become an organic whole. However, also can dispose flange and heating machanism respectively as the monomer.

Ceramic heater 42 accepts the surface of the liquid priming side of raw materials, namely on the face with function side of flange, dispose the porous layer 46 of absorption of 0.01mm-20mm thickness, for example, the absorbent carbon floor of about 0.5mm of the thickness. The porous layer 46 not only protect the surface of the ceramic heater 42 but also can keep the priming of raw materials and relax the heat transfer of the ceramic heater 42, thus play a role in making the evaporation of the priming of raw materials stabilized. Porous 46 can be by natural cellulose, inorganic compounds such as organic compound, the carbon (including absorbent carbon), aluminium oxide, carborundum,etc. such as cellulose derivative, aromatic polyamide resin take shape. The porous layer 46 can be the arbitrary shape, for example, can form these compounds in advance formers such as membrane, sheet material, board, fabric, non-woven fabrics,etc. to use, also can coat powder of these compounds on the heater 42 directly and form.

Form the cooling chamber 52 between ceramic heater 42 and pump-out slot 22, a part that this cooling chamber 52 forms the flow path 26 of gas. Forming has a angry introduction hole 54 outside on the sidewall of the body 14 of shell of the cooling chamber. With aroma gas that ceramic 42 heater heat in 52 cooling chamber with mix but reach 22 pump-out slot cool, while being angry outside. There are the angry introducing portion 54s with the predetermined correspondent opening area of the angry directing into amount outside outside. As shown, also can dispose on the shell 12 and have several split regulating rings 55 around angry introducing portion 54 outside. At this moment, through regulating the position relative to angry introduction hole 54 outside of this regulating ring 55, can have regulated the angry inflow outside in the cooling chamber 52 of entering.

Between cooling chamber 52 and pump-out slot 22, dispose the filter 58 of the covered pump-out slot 22 in the flow path 26 of gas. Through disposing the filter 58, can regulate the pressure loss to make it very appropriate and easy to suck. The filter 58 can be formed by common cigarette filter tip material that cellulose acetate cellulose, paper pulp,etc. form.

In shell 12 the second 12b internal fixation the 62 of powers of capable of mounting and demounting,have electric energy supply lasted 38 of drive portion, heaters 42 ceramic 62 of power and after 72 of control circuit stated. Through opening and closing the cover 64 of opening of 14 backs of the lock shell body, can mount the power 62 to body 14 of shell or take off. The power 62 had better be the direct current power supply, for example formed by commercial dry battery, rechargeable battery. However, the power 6 2 can be the alternating current power supply. In addition, the power 62 can be installed in outside of the body 14 of shell, also can set up but connect with body 14 of shell through conductor arrangement alone.

Have set up the control circuit 72 of drive used for controlling and discharging the drive portion 38 and ceramic heater 42 between power 62 and container 32 of raw materials. As shown in Fig. 4, the control circuit 72 has sensing circuit 72a, drive circuit 72b and power circuit 72c. Sensing circuit 72a uses the hand-operated switch 74 connecting sensor 73 and ON/OFF used for users sucked movements to measuring. Drive circuit 72b is connecting the drive portion 38 and ceramic heater 42 of discharging. Power circuit 72c connect 62.

The sensor 73 of the sucking movements used for measuring the user, dispose around body 14 of shell adjacent to pump-out slot 22ing. Sensor 73 with detecting the change of resistor, capacity change, get up piezoelectricity general sensors pressure sensitives strain types such as electricity,etc. form with the same principle, measure the pressure that is held in user's mouth and produce the electrical signal. In addition, lip sensor,etc. that swing bucket template sensor, joint type sensor, or Japanese special open flat 5-212100 that the sensor 73 states after being can be adopted too announce on.

The control circuit 72 uses the signal of the hand-operated switch 74, or the signal according to sensor 73 according to coming from ON/OFF, identical with the user's sucking movement to make to discharge the drive portion 38 and actuation of heater 42, make liquid raw materials discharge and gasify. Signal processing and control state in the control circuit 72, for example can be well-known simulation controlling, on-off control, or their association,etc..

ON/OFF disposes on the side of section 1 12a of housing 12 with the hand-operated switch 74. When not using this article, through with the state as closing of switching over the switch 74 manually, can make it stop not to discharge the drive portion 38 and heater 42 by force. The hand-operated switch 74 is formed with the generally small-scale mechanism of pressing the same principle of switch of the formula of waiting for of the microswitch of the electrical connection.

While using this article, namely, switch over the switch 74 to the open state, also can make the heater 42 the state that is heated. At this moment, the control circuit 72 can only control the movements of the drive portion 38 of discharge of making liquid raw materials discharge.

Below, explain the operative condition that the aroma illustrated in Fig. 1 turns into the article 10.

While sucking the aroma illustrated in Fig. 1 and turning into the article 10, the user puts through the hand-operated switch 74 first, section 1 12a holding housing 12 makes and sucks movements from the pump-out slot 22. Through this movement, send and suck the actuating signal to the control circuit 72 from the sensor 73, so, under the control of control circuit 72, it is electromotion to begin to the ceramic heater 42, meanwhile or after certain time, discharge the movements of drive portion 38.

Thereby, gasify after the liquid raw materials 36 discharge from nozzle 35, and are heated by the ceramic heater 42. The raw materials that are gasified, with the user's sucking movements, after with fetching the entry 24 and directing from the air into the nozzle 35 and mixing with main attraction air between the ceramic heaters 42 through the throttle orifice 20, sent the pump-out slot 22.

The activation of the electromotion and drive portion 38 of discharge of the ceramic heater 42, for example caminando according to the movement timing diagram illustrated in Fig. 6 or Fig. 7. 6 Fig. show, according to from sensor 73 signal, make ceramic coherent electric heating and liquid raw materials 36 simultaneous situation of discharge of 42 heater. Fig. 7 shows that make the ceramic heater 42 energize and preheat first according to the signal from sensor 73, after the heater temperature after certain time promptly rises to certain extent, situation that and then make the liquid raw materials 36 list.

If necessary, in the course of sucking, can change and fetch main attraction air amount and introduction air amount that comes in from the air from the angry introduction hole 54 of outside that the entry 24 enters by regulating ring 28, 60. Thereby, can change the taste with air of aroma of reaching the pump-out slot 22, can satisfy the sucking that users are fond of to feel.

As noted previously, housing 12 can make into and constructed through the ones that connected releasably of interconnecting piece 13 by section 1 12a, the second part of 12b. Accommodate the liquid raw materials 36, arrange and appear 34, ceramic heaters 42,etc. in section 1 12a. Accommodate the control circuit 72, power 62,etc. in the second part of 12b. The first and the second part of 12a, 12b are connecting electrically through the electric wire 15. So, this aroma turns into the article 10 and can be used in the integrated state of connecting the first and the second part of 12a, 12b through the interconnecting piece 13, also can be shown as in Fig. 5 the ground, use the first and the second part of 12a, 12b dividually. In the state illustrated in Fig. 5, because the first and the second part of 12a, 12b separate in 15 ad-

missible ranges of electric wire, so for example put in clothes pocket, hold in mouth the second 12b section 1 12a. In addition, also can connect the second part of 12b separated from section 1 12a with existing power, namely use by assembling.

Below, explaining adopts the aroma illustrated in Fig. 1 to turn into several experiments of the article 10.

First of all, adopt several natural Oleum Menthae Dementholatum as the aroma material, adopt glycerine as putting in aroma into the smoky smog and turning into the material, combine with water, the concentration ratio of water and glycerine is invited within the range of 2:98-90:10, modulate into several different liquid raw materials 36. The ones that reuse the aroma illustrated in Fig. 1 to turn into articles and is sucked and heated all liquid raw materials 3 6 and get, smog with aroma material, this condition that is sucked is, nearly use sucking 35cc to 50cc in 2 seconds during about 58 seconds and disposably, nearly last one minute. Its result, the concentration ratio of water and glycerine is 50:50, and add several natural Oleum Menthae Dementholatum and liquid raw materials 36 made, the stability that can guarantee to be listed, the sense of achievement that can reach the feeling while sucking and have at dawn and smoke volume sense visually, so adopt this liquid raw materials 36 in the following experiments. In addition, in the following experiments, during about 58 seconds, use a cycle sucked from 35cc to 50cc in 2 seconds each time, the condition that nearly carries on the standard for one minute and smokes is sucked, in addition, the discharge velocity nearly adopts 2.5mg / second.

On condition that like this, carry on the timed comparison of movement illustrated in Fig. 6 and Fig. 7. First of all, use illustrated in Fig. 6 regularly heater temperature from rising in room temperature to about 400 ℃ within 2 seconds. At this moment, in the ascending way to reach gasifiable temperature, the liquid raw materials 36 that are accumulated the heater are gasified quickly, condense adjacent to nozzle 35 because of swelling sharply, or splash as liquid bulb because of frothover, the utilization coefficient of the material is reduced. Then, preheat, reach with illustrated in Fig. 7 timing temperature of heater about 140-220 ℃ within preheating time, it rises to ℃420-440 ℃ within 2 seconds. At this moment, with discharge and gasify effectively liquid 36 raw materials.

The smoking in holding time of the user is electromotion and listing beginning until the time of the end from the heater in Fig. 6, it is equivalent to since the heater including preheating time is electromotion to the time of the end in Fig. 7. So, within time of smoking of standard, the right feeling all without exception while sucking for the user, the time to preheat had better presume it is in a range from about 0.1 seconds to one second. In addition, the temperature of preheating needn't be too high.

For example, use the preheating time of 2 seconds to preheat the heater until about 400 ℃, the raw materials that are thereafter discharged are gasified and swollen sharply, the condensed proportion increases, make the utilization coefficient of the material reduce instead adjacent to nozzle 35. From in addition, from movement that 73 sensor hold in mouth of 22 pump-out slot after 2 seconds, entering time to suck movement staggers and produces the uncomfortable feeling. In this experiment, in the timing of movement illustrated in Fig. 7, have taken about 0.5 seconds from room temperature to the 140 ℃ preheating of temperature, get temperature preheating, spending about 1 preheating time of second 220 ℃.

In addition, not when there is not porous layer 46 on the surface of the ceramic heater 42, the smooth surface, the liquid raw materials 36 are difficult and is caught heaters, will bounce etc.. At this moment, no matter in the timing illustrated in Fig. 6 or Fig. 7, can all see the inclination that the utilization coefficient of the material reduces.

Through the main suction air in the interval 27 after passing the throttle orifice 20, its velocity of flow is large while reaching somewhat, can raise the gasification efficiency of liquid raw materials. About this, under the circumstances that the standard conditions sucks 35cc-50cc/2 condition of smoking of second each time promptly, there are here from interval within 27 centre about 30mm on position of 20 of throttle orifice,is it about for 6m to last air velocity of 20 of throttle orifice /when being above seconds, can receive better result. This equivalent to makes the cross-sectional area of opening of the throttle orifice 20 into about 3mm ^{2} Following. But open cross-sectional area reduce, get make user apt intensity that suck pointless with mouth. In view of above-mentioned this point, the lower limit of the cross-sectional area of opening of the throttle orifice 20 had better be about 0.6mm ^{2} .

The distance of vertical direction between the magnitude, namely the nozzle 35 and ceramic heater 42 of the interval 27 influences gasification efficiency of the liquid raw materials 36. For inhibiting the utilization coefficient of the material caused by the fact that the gas near the nozzle 35 condenses from reducing, must make ceramic heater 42 and nozzle 35 stand opposite each other with the distance above about 2mm.

Below, the aroma of explaining several other embodiment of this invention turns into articles. In representing the embodiment's picture, some notes the same as that in aforesaid embodiment are by marking the samely, their detailed explanation is omitted.

Fig. 8 shows another embodiment's aroma of this invention turn into the skeleton diagram of articles.

This embodiment's aroma turns into articles and the aroma illustrated in Fig. 1 and turns into articles similarly, difference its that arrange, hold up one's head 34 35 nozzle towards different from structure as disclosed in Fig. 1, deflect 90, face the pump-out slot 22. So, the ceramic heater 42 opposite to nozzle 35 deflects 90 different from structure illustrated in Fig. 1ly. In addition, because arrange and appear 34 to dispose in the throttle orifice 20, so, and arranges and appear size of both sides 34 to limit by the throttle orifice 20 as the real opening of the throttle orifice 20 that flow path 26 functions of gas.

Fig. 9 shows another embodiment's aroma of this invention turn into the skeleton diagram of articles.

The characteristic point that this embodiment's aroma turns into articles is, at first, housing 12 can't separate into the first and the second part of 12a, 12b (see Fig. 1), liquid raw materials 36, arranging and appearing built-in 34, ceramic heater 42, the power 62, control portion 72,etc. in the body 14 of a shell. However, on the body 14 of shell, are mounting the gauze mask 16 releasably through the interconnecting piece 18, form the pump-out slot 22 here. The gauze mask 16 can be formed by materials such as the plastics, timber,etc.. The interconnecting piece 18 can adopt known constructions such as the screw or rabbetting,etc.. In addition, also can not use the gauze mask 16, and insert the filter in the body 14 of shell to use.

Secondly, the ones that set up on the container 32 of raw materials arrange holding up one's head in the nozzle 35 of 34 and having one only, discharge the liquid raw materials 36 towards the pump-out slot 22. So, the ceramic heater 42 opposite to nozzle 35 is the orientation the same as structure illustrated in Fig. 8. Moreover, have not disposed the throttle plate 21 (see Fig. 1) in the flow path 26 of gas, is supported the restriction of the support unit 44 of the ceramic heater 42, make it flow through the ceramic heater 42 not to flow into the air.

Fig. 10 shows another embodiment's aroma of this invention turn into the skeleton diagram of articles.

This embodiment's aroma turns into articles and the aroma illustrated in Fig. 9 and turns into articles similarly, the difference is, raw materials container 32 have hand actuated discharge operating organizations. For this reason, on the container 32 of raw materials, are con-

necting 14 outboard operating arms 76 of shell body of stretching to. While depressing the operating arm 76, can emit and is equivalent to the raw materials which gush out smoke volume of once, these raw materials are supplied on the ceramic heater 42 as the liquid priming or liquid droplet. In addition, after the ones that accepts to the pole 76 of control circuit 72 depress the actuating signal, according to this signal, supply power to heat to the ceramic heater 42, make the priming of raw materials gasify. Namely, the pole 76 replaces the drive portion 38 of discharge that the aroma illustrated in Fig. 1 turns into articles and measures the function that the user sucks the two of sensor 73 of movements.

The aroma illustrated in Fig. 10 turns into articles, is connecting the filler 82 used for liquid raw materials 36 of supply on the container 32 of raw materials. The end of the filler 82 shows outside of the body 14 of shell, can inject liquid raw materials into the container 32 of raw materials from here. As noted previously, raw materials 32 container have, can preserve several in user gush out smoke volume, correspond to liquid raw materials 36 capacity of quantity. However, because be able to supply raw materials, so, needn't change the container 32 of raw materials, can use this aroma to turn into articles more lastingly.

In addition, in order to see the surplus in the container 32 of raw materials, form the transparent observation window 84 corresponding to container 32 of raw materials on the sidewall of the body 14 of shell. So, lie in container 32 of raw materials here oneself and is formed by transparent or semitransparent container. Can monitor the surplus of liquid raw materials 36 in the container 32 of raw materials through the observation window 84, thus can know the time of raw materials supply.

In order to monitor the surplus in the container 32 of raw materials, can also not adopt the structure illustrated in Fig. 10, and adopt the association of electric surplus detection mechanism and electric indication mechanism. The electric surplus detection mechanism is for example a varying organization of conductivity which measures the container 32 of raw materials, the electric indication mechanism for example adopts the organization which mixes the luminescent diode in outside of body 14 of shell. In addition, monitor the organization of surplus in the container 32 of raw materials, also can adopt the edge glass to measure the way of surplus optically.

The aroma illustrated in Fig. 10 turns into articles, the power 62 is collected in box 66 of power, this power of boxes 66 are installed on body 14 of shell releasably through the interconnecting piece 68. The interconnecting piece 68 can adopt known constructions such as the screw or rabbetting,etc.. Because of adopting the magnitude with the power 62 to correspond to the box 66 of power of the length, can change the power 62 easily, and the repair, changing of part in the body 14 of shell is easy.

Fig. 11 shows another embodiment's aroma of this invention turn into the skeleton diagram of articles.

This embodiment's aroma turns into articles and the aroma illustrated in Fig. 10 and turns into articles similarly, the difference is, discharge the connection of the operating arm 76 to set up on the atomizer 86 on the nozzle 35. The atomizer 86 can feed equivalent to one gushing out smoky raw materials into the ceramic heater 42 with the liquid priming or liquid droplet state.

In the aroma illustrated in Fig. 11 turns into articles, dispose the stuff 56 in the cooling chamber 52. Through disposing the stuff 56, can promote the cooling effect of the already vaporous aroma composition, and the adjustable pressure loss but the appropriate intensity is easy to suck. The stuff 56 for example can adopt shot-like particle such as fibrous shaped body, glass, aluminium oxide particle that cellulose acetate cellulose, paper pulp,etc. form,etc..

Fig. 12 shows another embodiment's aroma of this invention turn into the skeleton diagram of articles.

The characteristic that this embodiment's aroma turns into articles is, between ceramic heater 42 and cooling chamber 52, in the flow path 26 of gas, dispose the shaped body 92 of raw materials of solid used for producing aroma,etc. that users sucks releasably.

The shaped body 92 of raw materials of solid, can contain material and/or their constituent extracted from various natural things according to the use. Aroma materials contained of the shaped body 92, for example can adopt the cigarette composition of peppermint, coffee, or the composition drawn from cigarette, cigarette agglomerate composition,etc..

During solid the shaped body 92 of raw materials and inner face of the body 14 of shell at the time of the no gap, should adopt the shaped body 92 with good air permeability. At this moment, the air fetches the inside of passing the shaped body 92 of flow path 26 of gas between the entry 24 and pump-out slot 22. If after state,at solid raw materials shaped body 92 and shell, during the inner faces of body 14 at the time of play, can use the shaped body 92 bad or without air permeability of air permeability. At this moment, the air fetches the interval that flow path 26 of gas passes during the inner faces of the shaped body 92 and body 14 of shell between the entry 24 and pump-out slot 22.

Fig. 13 shows another embodiment's aroma of this invention turn into the skeleton diagram of articles.

This embodiment's aroma turns into the difference that articles and the aroma illustrated in Fig. 12 turn into articles, the heater 94 of coil used for heating the shaped body 92 disposes around shaped body 92. In addition, also can form the hole on the shaped body 92, the heater who will heat the shaped body 92 disposes in this hole.

Coil 94 heater and ceramic 42 heater blow, control by 72 control circuit, fit with the user's sucking movement ground cover supply power. However, when being regarded as physique 92 to be hot and full bottomed, even act in cooperation with the user's sucking and begin to supply power to the heater of the coil identically, the production of aroma may be quite delayed too. So, in this case, while using this article, in switching over the switch 74 on-stately, also can presume the heater 94 of the coil as the state that is heated all the time,

In addition, 92 shaped body make, become with it has to be fully interspaceal size between the shell body 14 inner facing. So, the air fetches the main part of flow path 26 of gas between the entry 24 and pump-out slot 22 and passes this above-mentioned interval.

Fig. 14 shows another embodiment's aroma of this invention turn into the skeleton diagram of articles.

The characteristic that this embodiment's aroma turns into articles is, in order to measure the user's sucking movements, have adopted the template sensor of the bucket of swinging. More particularly, dispose and swing the sheet metal 102 between ceramic heater 42 and cooling chamber 52, in the flow path 26 of gas. In addition, among ceramic heater 42 and sheet metal 102, dispose the throttle plate 112 opposite to sheet metal 102, with opening 114 in the flow path 26 of gas. The sheet metal 102, with connecting integrally as the pole 104 of the conductivity of the start-stop lever of circuit of the sensor. Dispose the electric terminal 108 in the circuit of the sensor on the inner face of the body 14 of shell with the pole 104 of the conductivity relatively.

The sheet metal 102 and pole 104 combine the hub branch swingably on the supporting part 106 on 14 inner faces of shell body integrally, and anticlockwise direction is bulldozed in the picture the built-in inner spring on the supporting part 106. So, when usually, the sheet metal 102 is connected to throttle plate 112, the pole 104 is and a non-contact state in the

joint 108. However, when the user's sucking movements begin, the high-speed airstream of flowing makes the sheet metal 102 swing clockwise rotation in the picture at throttle plate 112, make the pole 104 contact with joint 108. Thereby, the sucking actuating signal that is swung the sheet metal type sensor user measuring out is transmitted to the control circuit 72, according to this testing signal, can control and discharge the drive portion 38 and ceramic heater 42.

Fig. 15 shows another embodiment's aroma of this invention turn into the skeleton diagram of articles.

The characteristic that this embodiment's aroma turns into articles is, in order to measure the user's sucking movements, have adopted the joint type sensor. More particularly, central authorities and pump-out slot end, dispose the electric terminal 122, 124 formed by cyclic conductivity board respectively outside the housing 12. Switches which form circuit of the sensor of electric terminal 122, 124, the joint 122, 124 is connected by the electric conductor, the sensor produced the testing signal. State this for example, user nip central 122 joint hold, live in, suck adoral 124 joint such two situation that terms satisfy at the same time with mouth. Thereby, the sucking actuating signal of the user measured out from the joint type sensor is transmitted to the control circuit 72, according to this testing signal, can control and discharge the drive portion 38 and ceramic heater 42.

Fig. 16 shows another embodiment's aroma of this invention turn into the skeleton diagram of articles.

This embodiment's aroma turns into articles, ones that turn into the same orientation of articles and dispose with the aroma illustrated in Fig. 1 arrange and hold up one's head the nozzle 35 of 34 and ceramic heaters 42 opposite to nozzle 35. But, housing 12 can't separate into the first and the second part of 12a, 12b (see Fig. 1), liquid raw materials 36, arranging and appearing built-in 34, ceramic heater 42, the power 62, control portion 72,etc. in the body 14 of a shell.

In addition, though has not disposed the throttle plate 21 (see Fig. 1) in the flow path 26 of gas, only the support unit 44 of the ceramic heater 42 have chinks on median answering to appear 34 to and arrange. So, fetching the inlet air of entry 26 from the air all passes the interval between the nozzle 35 and ceramic heater 42.

The above, in order to understand this invention content, dividing into several embodiment and doing every partial characteristic of this invention proves, but these characteristics can be made appropriately up according to the purpose. Namely, within the range of thought of this invention, can also make various implementation shapes beyond illustrated embodiment.

ENGLISH CLAIMS:

1.A kind of aroma turns into articles, characterized by, it has housing, raw materials container, discharges the driving mechanism, gasifies organization and power; Housing have draw in air air that inside spend, fetch entry and user and suck the pump-out slot that aroma uses, form the gas flow path between fetching entry and pump-out slot; Preserve liquid raw materials containing the aroma material in raw materials container at least, and have nozzles of aforesaid raw materials, these raw materials container are mounted into aforesaid housing; Discharge the driving mechanism and state aforesaid raw materials in the past on raw materials container to discharge as liquid droplet through the above-mentioned nozzle; Gasify the organization to dispose in the above-mentioned gas flow path, accept that stated liquid droplet of aforesaid raw materials that raw materials container were discharged in the past, and heat, make it gasify it in electricity utilization; To gasify organization, supply electric energy while being above-mentioned power.

2.The aroma according to Claim 1 turns into articles, characterized by, it also has sensors and controlling organizations; This sensor is used for measuring the user's sucking movements; Controlling organization this, according to from aforesaid sensor signal, control, discharge driving mechanism while being aforesaid, make aforesaid raw materials state and discharge in raw materials container in the past.

3.The aroma according to Claim 2 turns into articles, characterized by, the above-mentioned sensor has around the pump-out slot, disposes the force sensor on the aforesaid shell.

4.According to Claim 2 or 3 aroma turn into article, characterized by, above-mentioned controlling organization control, gasify organization while being aforesaid according to signal from aforesaid sensor, make the aforesaid evaporation organization generate heat.

5.The aroma according to Claim 4 turns into articles, characterized by, the above-mentioned controlling organization is before aforesaid raw materials are discharged, preheat, control, gasify organization and discharge the driving mechanism not gasifying organizationing while being aforesaid first.

6.The aroma according to Claim 1 turns into articles, characterized by, the above-mentioned power is disposed in aforesaid housing.

7.The aroma according to Claim 6 turns into articles, characterized by, the above-mentioned housing forms through the 1st and the 2nd part of connection of the electrical behavior of electric wire, above-mentioned gas flow path, raw materials container, discharging the driving mechanism to melt in the organization kindly and dispose in the aforesaid section 1, the aforesaid power is disposed in the the second aforesaid part.

8.The aroma according to Claim 7 turns into articles, characterized by, aforesaid the first and the 2nd part of the above-mentioned housing's passes the capable of mounting and demounting of interconnecting piece.

9.According to Claim 1 aroma turn into article, characterized by, it have, operate, discharge operating arm of driving mechanism while being aforesaid manually also.

10.If any stated aroma turns into articles in Claim 1 to 9, characterized by, it has porous layers that the aforesaid gasifies the organization, aforesaid liquid droplet of aforesaid raw materials is fed into this porous layer.

11.If any stated aroma turns into articles in Claim 1 to 10, characterized by, the aforesaid gasifies organization and aforesaid nozzle to dispose relatively, dispose the throttle orifice in the aforesaid gas flow path, fetch air that entry draw in, lead aforesaid nozzle to and gasify the interval between organization while being aforesaid from air throttle orifice this.

12.If any stated aroma turns into articles in Claim 1 to 11, characterized by, will direct it into aforesaid ones that gasified between organization and aforesaid pump-out slot in aforesaid gas flow path for being angry outside, form the air introduction hole outside on the shell.

13.If any stated aroma turns into articles in Claim 1 to 12, characterized by, it also has solid raw materials shaped body containing the aroma material at least, solid this raw materials shaped body locate, gasify between the organization and aforesaid pump-out slot disposing in the aforesaid gas flow path while being aforesaid.

14.The aroma according to Claim 13 turns into articles, characterized by, it also has a heating machanism used for heating the above-mentioned shaped body.